
Humans as Non-playing Characters in Smart Urban Environments

Anton Nijholt
Faculty EEMCS
University of Twente
The Netherlands
a.nijholt@utwente.nl

ABSTRACT

In this short position paper we argue that in future smart cities residents have a role that can be compared with non-playing characters in videogames. They can play, but their play is supervised, there is no free play, there is no spontaneous play, and there will be a McDonaldization of play all over the smart world. This view is in contrast with views that smart technology and citizens' access to smart technology will allow them to reconfigure their urban environments in order to make them playful. We will illustrate this view with some current examples of control, management, and also privatization of urban environments that make clear that play by future smart city residents will be controlled by smart technology, rather than this technology allows citizens to use it in creative collaborative and competitive play.

1 INTRODUCTION

Digital smartness will not only invade our home and work environments, it will also be present in environments where you shop, recreate, play sports, and do exercises. Digital smartness will be present when you travel, use public transport, and move around in urban environments. Sensors and actuators will be embedded in wearables, objects in the environment, and invisibly embedded in the environment (buildings, streets, street furniture). It will make citizens nodes in the Internet of Things: they can sense, they can be sensed, they can actuate, they can be actuated.

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KEYWORDS

Playable cities; urban games; videogames; smart cities; face recognition technology; gait recognition technology; social credit systems; citizen monitoring; privatization; narrative environments; non-playing characters.

Smart urban environments are not owned by their residents or the communities that have been formed. There are governmental rules and regulations, rules issued by regional and local authorities, and more and more management and control of public space is transferred to large and commercial companies. Public spaces are privatized, that is, their ownership or management is transferred to companies.

This is done in such a way that local authorities and companies agree about what will be offered to residents and also agree about what has to be paid by residents and what behavior is expected from citizens. Residents 'pay' by having their behavior monitored and controlled. For example, how they are allowed to consume the facilities offered by the city, i.e., their city consumption. Smart monitoring allows the detection of preferences and affect towards urban environments and what they have to offer. At the same time, this monitoring provides information about appropriate and inappropriate behavior, where 'appropriateness' is an issue that can have a different meaning in a public smart environment and in a privatized smart environment.

There is not necessarily a match between the interests of the smart environment owners and the interests of the inhabitants. The urban environment and the owners of the smartness embedded in these urban environments have control of the 'things' that are present in these environments, including the 'things' that represent human beings and including when, where, and how these 'things' want to play.

2 WE KNOW ABOUT CITIES, CITIES KNOW ABOUT US

Living in a city and experiencing a city introduces affective feelings for a city. We can feel proud to be New York citizen, we love London, are longing to pay another visit to Venice, looking forward to go back to the village or city where we spent our youth. When living in a city, we may feel safe or unsafe in certain areas. We avoid certain areas or we are happy to take a detour that brings back certain memories. Smart environments know about our preferences and our routines, the use of public transport, shopping and recreational activities. Sensors can sense our affect towards cities, city parts, city's public spaces, and city's activities. Measuring this affect provides a city with knowledge about its residents; measuring this affect and providing feedback also allows city dwellers to become aware of their behavior, become aware of alternatives, and perhaps decide to change their daily routines and their behavior. For example, find a safe route to jog, or avoid environments with bad smells or lots of noise [1,11,12].

Smart urban environments can detect appropriate and inappropriate behavior of citizens. Some years ago the city of Wellington (New Zealand) started a project to have sensors embedded in public spaces to detect acoustic activity such as screaming, shouts, and breaking glass. Sensors were planned to pick up the smells of paint fumes that indicated graffiti.

We can find similar projects in many other cities. The Wellington project ended in 2018 when the company involved 'refocused' its activities and the city was left alone with its aims to monitor begging, fighting, and other anti-social behavior. In other cities we can find examples of handgun detection, gunshot detection, and detecting aggressive behavior and alerting police officers when necessary. In a nightlife street in the Dutch city of Eindhoven there are experiments with light intensity changes and diffusing the smell of oranges to calm people down.

Good behavior in smart urban environments can be rewarded, inappropriate behavior can be punished. Cyclists in Enschede, also in the Netherlands, can have an app on their smartphone that connects to traffic lights and reduces the time they have to wait for a red light. Obviously, an app like that can also be used to check whether a red light is neglected.

Citizens can be persuaded to behave as required by the smart environment. It can be fun to use 'piano stairs' rather than an escalator. Or to throw your waste in a bin that makes a funny sound when it accepts it. Or have a pedestrian crossing that entertains you while waiting for a green light. Other, more confronting examples are billboards with smoke detectors that display coughing sounds when you pass them while smoking, or pedestrian crossings that emit the sound of the loud squealing of brakes of an onrushing car when you decide to cross while the light is still red. Smart city technology is about persuading and enforcing appropriate behavior.

3 MCDONALDIZATION, DISNEYIZATION, GAMIFICATION, AND PRIVATISATION

The embedding of smart technology in urban environments aims at making cities more efficient. Part of making cities more efficient is predicting and controlling the consumption behavior and the physical behavior of citizens by persuasion and enforcing. This can be done by civic authorities, but they can delegate such tasks to commercial companies or even sell public spaces to commercial companies and allow them to introduce regulations for their 'private' spaces that are more restrictive than those maintained in public spaces. Moreover, these commercially owned spaces can be organized in such a way that behavior of their visitors is almost fully enforced by the commercial company and its aim to reduce costs and increase profits. Smart technology employed by companies can be exploited to reach such a goal. Making a city smart, more efficient and sustainable, are also aims of city authorities. Privatisation is perhaps an easy way to achieve this, but it will be accompanied with a loss of privacy and a loss of moving freely in urban environments.

We can take social media as an example. We use Facebook, Twitter, Instagram and obey their rules of use. We provide them with personal information and accept that it is used to change our behavior and that of others. We provide Google with information about our interests. We accept that this information is used to guide and influence our consumption behavior. Software on our PC, laptop, and smartphone register how it is used, the YouTube videos we watch, our downloads, TV series or documentaries we are interested in, et cetera. Technically it is no problem for Microsoft, Google, or other companies to monitor and analyze our email communication.

Whether it is city government or companies, both have interest in citizens' behavior that can be predicted and both have interest in means that support such an aim, including means that persuade or enforce particular behavior. Can the smart city take over the role of our social media, not only monitoring what we are doing, but also persuading or enforcing us to subdue our behavior, impulses, and emotions in exchange of certain rewards while we use public spaces? Hence, an urban environment that has access to voluntarily and involuntarily user provided content and can use this content to support the aims of the owners or managers of the environment.

There are also some global and worldwide developments that have impact on the use of urban environments by their residents. We mention McDonaldization [13], Disneyization [2,3], Gamification [14], and Privatisation. Ritzer [13] explains: "McDonaldization is the process by which the principles of the fast-food restaurant are coming to dominate more and more sectors of American society as well as of the rest of the world." In addition to the McDonaldization view, there is the Disneyization point of view. Bryman [2] explains: "Disneyization is the process by which the principles of the Disney theme parks are coming to dominate more and more sectors of American society as well as the rest of the world." In gamification of 'our' urban environments we earn points for our 'good' behavior and loose points when we do something wrong. Privatisation allows companies to introduce rule of McDonaldization, Disneyization and gamification in 'their' urban environments that define what they consider to be appropriate behavior. Can we be criticized, punished or rewarded, because of the way we are behaving in themed public spaces? Are we expected to like the theme or the narrative [10] and adapt our behavior to theme and narrative?

4 FROM 'GOOGLE HOME' TO 'GOOGLE URBAN'?

Many years ago we wrote about Google taking over our home environments and having a 'Google Home' device installed in our home that knows about our activities and experiences, and even allows us to retrieve and re-experience them [4]. Can we expect that Google or similar existing or future companies take over our environments and collect, analyze, interpret and take actions that benefit us or those who own our environments? Companies involved in collecting and interpreting such data use and sell such data and provide other companies and authorities with the results of their investigations. So-called 'big data' is analyzed and interpreted using machine-learning techniques from which our behavior is predicted or our behavior is controlled. The environment can persuade us, not necessarily telling us the whole truth, to behave and move in certain ways.

Who is deciding about appropriate behavior or how to persuade people to adhere to a particular or a company's preferred behavior (whether inspired by McDonald, Disney, or Google) and how to enforce such behavior? In the previous sections we already mentioned that smart city technology owners (Alphabet/Google, Cisco, Intel, Siemens, etc.) are pushing their technology to civic authorities in the hope of becoming responsible of a city's smart city technology development and also controlling how citizens need to behave in order to make their city more smart.

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Future versions of Alexa, Google Assistant, Siri, and Cortana will take over control of our home environments. We adapt to their expectations. Sensor and actuator technology in urban environments will make it possible to have a similar development for public spaces. Municipalities don't have the knowledge that is necessary to deal with such developments or lack the power and finances to refuse and stop companies to take over the management or ownership of public spaces.

5 HUMANS AS NON-PLAYING CHARACTERS

Videogames have 'non-playing' characters: characters with no or only very limited intelligence and with a behavior that is controlled by the environment designed by the game designers and the actions of the (role-playing) gamer. In videogames we have a fully controlled 2D or 3D graphic environment in which we, as gamer, can interact with these non-playing characters. As argued in [5] there will be a convergence of videogame environments, augmented and virtual reality environments, and physical urban environments controlled by an UOS (Urban Operating System) and guided by principles from McDonaldization, Disneyization and gamification that enforce inhabitants' to act as non-playing characters with scripted roles.

6 AUTHOR'S PAST AND FUTURE WORK RELATED TO OUTDOOR PLAY

Previous research focused on videogames, interactive playgrounds, and, more generally, multimodal interaction in game and entertainment environments. More recent activities, very much related to 'outdoor play', include the editing of a book on playable cities that included some authored chapters with (critical) observations on the playable cities concept and mischief in playable cities [6,7]. The convergence of videogames and smart cities was also discussed in [5]. Further criticism on current ideas about playable cities and their focus on an audience from the so-called creative class rather than on 'the average citizen' was published in [8]. A second edited book on playable cities: 'Making Cities Playable', will appear in the Springer Gaming Media and Social Effects series in the Summer of 2019 [9]. Three (until now) well-attended workshops have been organized on playable cities: Utrecht (2016), Funchal (2017), and Braga (2018). A fourth workshop will be planned in 2019. Accepted papers of these workshops have been published by Springer. In addition, outdoor play in playable cities has been the topic of various keynote and invited talks in recent years: ECCE (Cox's Bazar, Bangladesh), ICIEV (Himeji, Japan), ICDEc (Brest, France), and ArtsIT (Braga, Portugal).

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