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Editorial

Smart Cities at Play: Technology and Emerging forms of playfulness

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Smart cities are commonly described as 'places where information technology is combined with infrastructure, architecture, everyday objects, and even our bodies to address social, economic, and environmental problems' (Townsend, 2013: 15). In recent years, this notion of smart cities has become the focus of a mounting body of scholarly work (see Campbell, 2013; Deakin and Waer, 2012; Goldsmith and Crawford, 2014; Kitchen, 2014; Obaidat and Nicopolitidis, 2016; Picon, 2015; Stimmel, C. L., 2015). As a corollary to this research, an increasingly important facet of this development has been mobile media embedded with other technologies, such as the global positioning system (GPS). These technologies, and the data they gather, have provided the platform for new forms of urban analysis (Ratti et al., 2006; Shoval, 2008), municipal planning (Becker, et al., 2011; Steenbruggen et al., 2015), as well as the production of more efficient spaces. To this end, locative data has been recursively used to interpret levels of traffic (Nagda et al., 2005), forecast the arrival of mass transit vehicles (Wall and Dailey, 1999), and assist ridesharing services (Agatz et al.., 2011, 2012; Kamar and Horvitz, 2009; Cangialosi et al.., 2014). In this vein, locative technologies can be employed to better understand human mobilities (Becker et al, 2013), monitor crowds during large gatherings (Blanke et al., 2014; Draghici et al., 2015; El Mallah et al., 2015; Wirz et al, 2015), and theorise the physical behaviours of tourists (Shoval and Isaacson, 2009; McKercher et al., 2012; Pettersson and Zillinger, 2011). At the same time, the advancement of smartphones—equally embedded with all manner of technologies, including GPS—has led to an array of locative media, including hybrid reality games (HRG), as well as—more generally—the mainstreaming of locative features into the broader media landscape (Evans and Saker, 2017).

Importantly, then, digital technologies, in a variety of forms, are part of our daily lives (Hazas and Krumm, 2004). Likewise, these technologies increasingly co-constitute our phenomenological experience of the urban environment. While this might be the case, '[in] the rush to create so-called 'smart cities' … much of the attention has been on how to technically create and implement suitable smart city technology' (Kitchen et al., 2017:1). What is, therefore, missing from these discussions is a deeper engagement with the lived perspective (de Certeau, 1984) of these supposedly 'smart spaces', experienced on "the ground", and the extent to which this confluence of the physical and digital are currently configuring new forms of play that can be contextualised within the wide field of smart

cities. Certainly, smart cities can produce different degrees of playfulness. HRGs like Pokémon Go, for instance, can allow users to explicitly interact with their environment in a playful manner, while impacting sociality, and altering how users feel about themselves and their environment (Evans and Saker, 2019; Saker and Evans, 2020). Equally, digital technologies have the power to configure emerging approaches to space and place that may not be as overtly ludic, but are playful nonetheless. Take the social value of lodging services, such as Airbnb, for example. These services challenge how short-term accommodation is understood; moving beyond the sterility of standard hotels and towards something that is markedly—on the surface at least—different.

Whether explicit or implicit, then, it is our contention that smart cities can produce a meaningful suite of both planned and unplanned forms of play and playfulness that are not immediately accounted for in the context of 'efficiency' or pragmatism, but are still important in the context of illuminating the contours of this field and the extent to which the phenomenology of the urban environment presents different revealings of place (Evans, 2015). To be clear, this importance extends beyond simply describing emerging instances of municipal play amidst the physical and the digital. Many observers have helpfully demonstrated that not everyone experiences related services in the same way. For example, Airbnb has come under various criticism, with hosts reportedly canceling reservations because of the ethnicity of their occupants, or occupants being asked to leave without being given sufficient reason (Mosbergen, 2019). Again, these stories are significant for researchers and practitioners alike. And it is only by addressing the lived experience of smart cities through these stories that we are able to reveal *the* manifold ways these spaces are—at times playfully—experienced, as well as the varied inconsistencies that often remain just beneath the surface when related discussions simply focus on technology and the physical infrastructure framing smart cities.

Our special issue, therefore, covers a broad range of topics and explores how experiences of the city might be changing as a result of new technological practices that are currently creating both explicit and implicit playful possibilities, as well as the various social ramifications of this. In the article titled 'Factors That Determine Residents' Acceptance of Smart City Technologies', the authors propose a Smart Cities Stakeholders Adoption Model (SSA) to determine the influence of seven factors—effort expectancy, self-efficacy, perceived privacy, perceived security, trust in technology, price value and trust in government—on behavior intention, specifically the decision to adopt smart-city technologies. The results demonstrate that each of these factors significantly influences citizen intention to use smart-city services. The results also reveal perceived security and perceived privacy to be strong determinants of trust in technology, while price value is a determinant of trust in the government. In turn, both types of trust are shown to increase user intention to adopt and use smart-city services. These findings offer city officials an

approach to gauging residential intention to use smart-city services, as well as identify those factors critical to developing a successful smart-city strategy. The SSA model, therefore, makes an important contribution to the literature on smart-city services in the context of patterns of adoption.

Moving forward, the authors of the article entitled, 'The Role of a Location-Based City Exploration Game in Digital Placemaking' explore how location-based games (LBGs), can support urban residents in community awareness, city exploration, and placemaking. To examine this topic, the authors investigate the various challenges urban residents face in finding information about their community, while implementing and evaluating an LBG called City Explorer that supports city exploration using gamification and the viewing and sharing of community information. The results of this exploration demonstrate that residents value fun, competition, and rewards afforded through locative play in public spaces, creating opportunities for placemaking through location services, alongside knowledge sharing. Players also appreciate additional knowledge about their transit commutes, including data about the frequency and route of their transit rides. Collectively, such ridership data offers the potential for smart city initiatives and illustrates that careful design considerations are required to balance peoples' needs for play, personal data, privacy, and the acquisition of community information.

Building upon this theme through an innovative framework of urban philosophy and everyday aesthetics, the authors of the article entitled 'Seeing New in the Familiar: Intensifying Aesthetic Engagement with the City through New Location-Based Technologies' explore the impact of mobile application on experiences and appreciations of urban environments. Significantly, the authors highlight that new digital tools can increase the quality of fun when moving through familiar surroundings. To be clear, fun—understood here through the lens of the aesthetic—precedes the experience of playfulness; that is, it alters the existing affordances of the urban environment in a way that allows more complex aesthetic qualities to emerge.

In a similar vein, the authors of the paper entitled 'Play in the Smart City Context: Exploring Interactional, Bodily, Social and Spatial Aspects of Situated Interfaces' examine how the digital and the physical facets of urban media installations can produce enjoyable and socially thriving playscapes. Accordingly, two case studies of urban media installations featuring high levels of interactivity and playfulness are presented: the Appearing Rooms, a seasonal art installation in London, and the Mirror Pool, a permanent, large-scale urban installation in Bradford, UK. Each of these interfaces incorporates a design paradigm that differs from the other in terms of context, duration of implementation, and scale. Following a longitudinal approach based on non-participant observations and time-lapse photography, the authors analyse emergent interactions and focus in particular on playful

encounters at different levels and scales: from the micro scale of the bodily engagement to the macro scale of the spatial and social configurations. Their case studies highlight that the urban spatial layout is a key element in defining the emerging interactions and encounters around the urban situated interfaces. The authors suggest, within the premise of the "smart city", that digital technologies can have an active role, with a great potential to encourage playful experiences and shared encounters in urban spaces; yet the digital should be coupled with a careful consideration of the spatial, physical, material and bodily aspects of interactions, that are fundamental to our lived experience of the city.

In the context of accessibility, the article 'Smart Data at Play: Improving accessibility in the urban transport system' the authors describe findings from the Access@City Research Project, which seeks to improve the accessibility in the public transport system by using available information (open data, semantic-aware knowledge) provided by transport organizations in combination with a hybrid reality crowdsourcing game (HRG) to enrich information regarding the accessibility of subway stations. Their results illustrate that in a relatively short time this combination can provide an accurate description of the accessibility of these stations. After reflecting on their experiments and experiences with the Access@City project the authors suggest that playful approaches, such as the ones employed in this article, have the potential to capture accessibility data that the city couldn't capture otherwise.

Finally, the last article of our special issue is entitled 'Serious Gaming as a Means of Facilitating Truly Smart Cities: A Narrative Review'. Here, the authors fittingly review the ways that gamification can be used to understand the effects of 'smart initiatives' on cities and their operation. The authors conclude that gaming has considerable potential to affect individual and societal practices by profoundly influencing the gamers themselves, while technology and the game design play a central role in how gamification is implemented and used. Further, based on their analysis of the surrounding literature, the authors propose that way-finding games, when designed with sustainability, resilience and liveability agendas in mind, can potentially lead to increased citizen participation. Consequently, this article will serve as a useful platform to survey potential avenues for future research in the field.

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