

Masquerade: Social Influence of Full-Body Game Interaction on Public Displays

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ABSTRACT

Masquerade is a public interactive game that embraces the possibilities of (networked) public displays and natural user interfaces, as a means for people to socialize in public environments in fun and playful ways. The game challenges people to mirror body poses that others have recorded before them. In this presentation, we will describe our analysis of *Masquerade* from a socio-technical perspective, as we analyse the impact of public interaction and gameplay on the socialization processes within distinct (semi)-public spaces, as well as across these spaces. We emphasize the role of natural user interfaces, and body gestures in particular, in supporting gameplay in public environments, and their influence on social interaction.

Keywords

Public space, public display, natural user interface, social behaviour, body gesture, group dynamics.

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INTRODUCTION

Public displays are becoming increasingly popular in urban environments, commonly embraced as a means to communicate official information, cultural announcements and advertising with local residents, commuters and tourists (e.g. McQuire et al. 2009). Their widespread adoption is even more stimulated by the rapid development and integration of interactive features, such as the ability to recognize the emotions of viewers, eye gaze, and body posture. However, the abundance of technology is also perceived to threaten socialization in public spaces and to increasingly divide people from co-located strangers within their own community (Paulos & Goodman 2004). As such, the question can be raised about how public displays can be employed to explore and exploit social qualities.

In addressing this question, gameplay experiences have proven to be beneficial in stimulating spontaneity, creativity and interpersonal communication (Spolin 1963), both in domestic environments (e.g. Volda 2009) and public spaces (e.g. Agamanolis 2003). However, while domestic environments provide a wealth of social and personal comfort, (semi)-public spaces pose various challenges when participation is required. This includes challenges such as the considerable time commitment that may be expected from people, the influence that climate, spatial setup and groups of people may have, and the perceived risk of social embarrassment, i.e. the fear of making a fool of oneself in front of others (Brignull & Rogers 2003), that may cause themselves, as well as onlookers, to refrain from interacting. The latter may be even more challenging as natural user interfaces¹ (NUIs) and gestural interaction gain an increasing importance in our everyday dealings with technology.



Figure 1: Gameplay in front of one of the public displays, i.e. recording a new pose (left) and scoreboard after having mirrored a pose (right).

Masquerade explores the effects of a public interactive game on the social behaviour with and around two networked public displays on a university campus. The game has been specifically designed to demonstrate and evaluate the potential of NUIs, such as full-body interaction modalities. Passers-by are invited to record specific poses in front of one of the displays, which are then to be mirrored by accidental people that pass in front of the other display (see Figure 1). Whilst mirroring, players are shown a single visual representation of the recorded pose, which may consist of skeletal data, a full-colour picture or a combination of both. While a group of friends can collaborate on mirroring a

¹ A natural user interface provides the space to interact with a device through intuitive interactions related to normal, everyday human gestures (Wigdor & Wixon 2011).

pose, the game also blurs the boundaries between players, spectators and passers-by: the sensor technology in itself does not distinguish between any of these roles, nor their degree of involvement with the game. As such, a simple pose that was initially performed by one player can easily result in a ‘glitchy’, complex and potentially irreproducible pose that involves the implicit collaboration with random passers-by. The game also investigates the role of “gestural excess” (Simon 2009, Apperley 2013), i.e. how physical exertion is visible in visual representations, and its influence on the playful experience.

In this presentation, we will describe the analysis of *Masquerade* from a socio-technical perspective, i.e. the influence of representing and performing poses in (semi)-public spaces on the motivation to participate in a game and the experience of players and passers-by. We build upon observations, semi-structured interviews and interaction logs that were collected during a six-week field study. We analysed how visual representations of people's poses influenced the individual experience (e.g. privacy concerns, social embarrassment), social experience (e.g. recognisability of others, elements of fun) and technical experience (e.g. faulty sensor readings resulting in challenging mirror tasks). We pay particular attention to the patterns of socialization that emerged in the vicinity of the public display before, during and after gameplay, how they were influenced by the technical characteristics of the game (e.g. visual representations) and the nature of the physical space (e.g. passageway versus study area), and how this influenced the experience of the physical space (e.g. conflict between environments of play and study).

Our main contribution is to fill a gap in knowledge about how to stimulate physical play and collaborative forms of social interaction by way of interactive public displays. We highlight the qualities of networked public displays that provide a live connection between two or more remote destinations (e.g. Fatah Gen Schieck & Fan 2012). While these configurations tend to create a regulated social interaction (as a result of the virtual space that connects the displays), *Masquerade* investigates the potential of stimulating spontaneous social interaction in an open, physical space.

BIO

Niels Wouters is a PhD candidate at KU Leuven, Belgium and visiting researcher at The University of Melbourne. His research focuses on the social and architectural qualities of media architecture, i.e. the integration of digital display media in the built environment.

Dr. John Downs is a Research Fellow in the Microsoft Research Centre for Social Natural User Interfaces, based at The University of Melbourne. His research focuses on the use of NUI technologies in public space.

Dr. Marcus Carter is a Research Fellow in the Microsoft Research Centre for Social Natural User Interfaces. His ongoing research is concerned with emerging interfaces and their affordances regarding the sociality and experience of digital games. His PhD focused on the practices, experiences and impacts of treacherous play - such as scamming and espionage - in the dystopian MMOG *EVE Online*, and has also published on *DayZ*, *Warhammer 40,000* and *Candy Crush Saga*.

Prof. Dr. Andrew Vande Moere is an Associate Professor at the Department of Architecture of KU Leuven (Belgium), and the main author behind the weblog “Information Aesthetics” (<http://infosthetics.com>). Andrew conducted research at ETH Zurich (Switzerland) and the University of Sydney on the symbiosis of media and space, exemplified by topics such as urban informatics, media architecture and urban mapping.

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