ToDIGRA

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Physical and Digital in Games and Play

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Introduction

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Editors' Introduction to the Special Issue

Even while digital games have meant a major transformation for the landscape of games and play, it can also be argued that all games are always also physical – or hybrid – by their nature. With traditional board or card games, for example, it is obvious that the tactile quality, materials and design of game boards, cards and playing pieces contributes to the look and feel of the game. And yet it is also equally clear that the physical characteristics of chess pieces, for example, do not contribute to the dynamics of game play in chess in a similar way as the rules of chess do. However, if the chess pieces are designed in non-conventional ways, like by making them very heavy, huge in size, or slippery, for example, the role of physical dimensions is again brought to the forefront of our game experience.

This special issue is a collection of papers which started their life as working papers, drawn from ongoing games research projects that were presented in the 2013 Game Studies spring seminar in the University of Tampere. Titled "Physical and Digital in Games and Play", this seminar aimed on one hand to highlight the unique characteristics both material and immaterial aspects hold in games and play, but also to bring the digital and physical game studies into closer contact and dialogue with each other. Fifteen research papers were presented in the seminar, and afterwards the selection of articles in this journal issue were chosen and expanded through the standard process of double-blind peer-reviews and editorial work. We want to thank both the authors and the anonymous reviewers for their hard work in the preparation of this issue.

It is clear that while all games have some aspects that relate more to their designed nature, and some performative dimensions that appear

only when they are played with, the ongoing developments in information and communication technologies have meant that the relation of material and immaterial in games and play has changed, and is continuing to change as new technologies are being introduced. While an early video game like PONG (Atari, 1971) was certainly interesting both in terms of its rule system (as embedded in its electronic circuits) and in level of the material design of its arcade cabinet, the current developments in more advanced game controls and sensor technologies that have started to blur and redefine the traditional characteristics of computer and video games. PlayStation digital camera accessory EyeToy (Sony/Logitech, 2003) is an example of how pattern recognition and the sense of vision has become an element of video games, while the physicality afforded by the Wii Remote (Nintendo, 2006) has built upon accelerometer and optical sensor technologies in order to translate the movements of player's physical body into game events. More recently, the Skylanders game series (Activision, 2011-) has utilized NFC (Near Field Communication) tags, embedded in physical character figures, which are then used to "import" these characters into the digital video game.

There is remarkable range of research issues that relate to the interplay of physical and digital in games and play, starting from the fundamental questions about the ontology of games (the ways in which games or play can be said to exist), and concluding in detailed discussions of individual games, or their physical and digital elements. The use of wireless technologies, various sensors, the growing popularity of mobile games as well as the many transmedia extensions of games into other media, or games related merchandise that also links with and extends the reach of games in different ways are just some examples of the directions which the research in this area can take. The selection of papers in this issue is of course not able to address all such areas, but together these seven papers are capable of mapping out some contours of this, rapidly expanding area. The dialectic of analog and digital is certainly proving to be one of the most fruitful catalysts for the ongoing attempts to redefine and

rethink what "game studies" actually are, and which questions should it address.

The seven papers of this issue are organised loosely in an order where we move from experimental work on playful, physical technologies towards more specifically games related research areas.

The first paper is by Stephanie de Smale, and it is titled "Building Material: Exploring Playfulness of 3D Printers". In her article de Smale investigates the playful dimensions of 3D printers and the evolving practices around them. The author draws attention to how this rhetorically new, albeit professionally established technology affords playful engagement through a case study of the Ultimaker Original. The author suggests that the aspect of play is mediated both digitally (software) and physically (hardware). By addressing the materiality of open source development and creative processes in relation to the Ultimaker, de Smale argues that 3D printing stimulates its users to ludic engagement with the 3D printer by i.e. hacking it. As a result the author points out how these playful practices can be seen as part of a general development towards the ludification of culture.

The second article is joint work by Paul Coulton, Dan Burnett, Adrian Gradinar, David Gullick and Emma Murphy, and titled "Game Design in an Internet of Things". The authors address the nature of game design in reference to the emerging Internet of Things. They consider the emerging convergence between games and the Internet of Things (IoT) by analysing contemporary physical/digital objects. In current times the boundaries between both the ontology and dimensions of toys and games are blurring and we are witnessing a growing interest of developing physical play affordances in virtual gaming platforms. This, as the authors suggest, creates new requirements for interaction design, both in terms of product and computer interface design. The article provides several examples of existing products that demonstrate novel takes on game design, such as Skylanders: Spyro's Adventure from Activision and Disney Infinity.

The authors then utilise Bill Verplank's framing of interaction design to consider the changing role of affordance when interaction takes place between both screens and phygital objects. Coulton et al envision a future in which creating game objects linking the physical and digital will require the adoption of broadly-based design sensibilities.

The third article is by Alison Gazzard, Mark Lochrie, Adrian Gradinar, Paul Coulton, Daniel Burnett and Daniel Kershaw, and it is titled "From the Board to the Streets: A Case Study of Local Property Trader". The article describes an interesting case of a mobile location based social media game, extending and combining features from previous concepts e.g. FourSquare social media mobile application and the traditional Monopoly board game. A good and extensive overview on the subject of the relation between board games and respective digital games is given. NFC and QR code technologies are used to combine the physical and virtual worlds, making it possible for the players to move around the city and interact with local businesses. The use of technology and integration of players with the community updates the traditional Monopoly and offers excellent possibilities for new experiences.

The fourth article is authored by Frederika Eilers, and it is titled "SimCity and the Creative Class: Happiness, Place, and the Pursuit of Urban Planning". This article reports an experimental study on the SimCity game. Employing a material culture method the author engages with the game manuals along with notebooks and presentations of Will Wright, the creator of SimCity, in order to clarify design work inspired by spatial representations, models and maps. In comparison, Eilers reviews the writings of urban theorist Richard Florida to evaluate similarities regarding cities and personalities and compares social engineering in the game and in urban planning theory. SimCity is addressed by Eilers as an artefact and its societies are discussed in reference to Florida's creative class. The cultural analysis employing material culture methodology reveals the significance of places and happiness. At the same time SimCity poses unique problems since it reflects a simplified version of reality

like a road map or a model. The author suggests a discussion of benefits and limitations of framing the SimCity game in material culture, in play theory and in game theory to reinvigorate critiques of both Simulated and Floridated cities. Subsequently, Eilers concludes that any social and spatial assumptions the game conveys should be critically approached if used in education.

The fifth article of this issue is by Inger Ekman, titled "'That's Not a Secure Area' – Physical-Digital Sound Links in Commercial Locative Games". The author presents a detailed dissection of how sound is utilized in seven commercial locative games, based on first-hand play experiences. The article also contributes by revealing gaps between the research knowledge and current industry design practices. Sound is commonly underused modality in interactive systems despite the fact that, as a spatial sense, it is able to provide rich contextual cues and therefore effectively link real and virtual. The results highlight several interesting viewpoints into how sound is used as well as underused in recent games.

The sixth article is jointly authored by Karl Bergström and Staffan Björk, and it is titled "The Case for Computer-Augmented Games": The authors discuss the benefits of using digital information and communication technologies to augment and facilitate traditional (non-digital) gameplay, rather than implementing games that rely completely on computers. They present earlier related work, such as Ishii's concept "Computer-Supported Collaborative Play", and the experimentation that has took place within the pervasive gaming research field. The main part of the article is based on several case studies where the authors have participated in the design and evaluation of computer-augmented games like "Wizard's Apprentice", "M.I.G" (Mobile Intelligence Game) and "Undercurrents". Several different techniques are used in these experiments, including board game augmented with RFID-tagged game tokens, computer-simulated dice, and online, PC-based communication tool for helping share secret information in a table-top role-playing game situation. The authors then proceed to present key dimensions for computer-augmented games, and use the

identified dimensions to further explore the design space of CAGs (Computer-Augmented Games).

The concluding, seventh article presents the work by Marcus Carter, Mitchell Harrop and Martin Gibbs, and is titled “The Roll of the Dice in Warhammer 40,000” In this article, the humble many-sided dice is taken under scrutiny. In the context of non-digital strategy game Warhammer 40,000 (W40k) the use of dice holds a particularly notable role. Typical to the tradition of war games, W40k is focused on turn-based simulation of battles, where attacks of each units are arbitrated with the help of rules, unit statistics, and dice. In this case, tens of regular, six-sided dice can be rolled at the same time, creating a small-scale physical and audio-visual spectacle as handfuls of dice simultaneously roll on to the table. On the basis of their interviews and participant observations of W40k players, the authors argue against some of the previous literature in computer augmented play. While it seems intuitively easy to claim that the ‘boring’ tasks of dice rolling and calculations of results should be augmented with digital technology (such as e.g. using a smartphone application), these chores actually appear to serve important social functions for strategy game players. Also, the physicality of playing with real dice contributes important audio-visual components to the gameplay of this type of tabletop games. The authors name as “digital augmentation fallacy” the tendency to overlook such functions in traditional, physical elements of games.

As this selection of studies shows, the diversity in physical-digital game studies is great, and there are several interesting directions where both experimental work, analysis and theoretical scholarship can proceed in the future. Consequently, this issue can be read also as an invitation for “hybrid game studies” – more interdisciplinary and critically aware phase of research which would challenge the division lines in academia, and as “hybrid turn” would challenge the relative isolation of such fields as board game studies, digital game studies, transmedial or hybrid media studies, and experimental, playful design research, for example.