

DIGRA

Transactions of the
Digital Games
Research Association

Volume 3 Number 2 September 2017

ToDiGRA

ToDiGRA

Ashley Brown & Rafael Bidarra (Editors)

CARNEGIE MELLON: ETC PRESS
PITTSBURGH, PA



ToDiGRA by Ashley Brown & Rafael Bidarra (Editors) is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License, except where otherwise noted.

Copyright © by ETC Press 2017 <http://press.etc.cmu.edu/>

ISSN 2328-9414 (Print)

ISSN 2328-9422 (Online)

TEXT: The text of this work is licensed under a Creative Commons Attribution-NonCommercial-NonDerivative 2.5 License (<http://creativecommons.org/licenses/by-nc-nd/2.5/>)

IMAGES: All images appearing in this work are property of the respective copyright owners, and are not released into the Creative Commons. The respective owners reserve all rights.

For information and formatting guidelines, see: <http://todigra.org/index.php/todigra/about/submissions>

Contents

ToDiGRA	vii
Introduction Ashley Brown & Rafael Bidarra	1
1. No-one Plays Alone Chris Bateman	5
2. “Ruinensehnsucht” Longing for Decay in Computer Games Mathias Fuchs	37
3. Creative Communities Shaping Process through Performance and Play Lynn Parker & Dayna Galloway	57
4. Playful Fandom Gaming, Media and the Ludic Dimensions of Textual Poaching Orion Mavridou	89
5. A Review of Social Features in Social Network Games Janne Paavilainen, Kati Alha, & Hannu Korhonen	113
6. Focus, Sensitivity, Judgement, Action Four Lenses for Designing Morally Engaging Games Malcolm Ryan, Dan Staines, & Paul Formosa	143
7. Developing Ideation Cards for Mixed Reality Game Design Richard Wetzel, Tom Rodden, & Steve Benford	175
8. Source Code and Formal Analysis A Reading of Passage Ea Christina Willumsen	213
Contributors	237
About ToDiGRA	241

ToDiGRA

Ashley Brown – Special Guest Editor
University of Utah, USA

Rafael Bidarra – Special Guest Editor
Delt University of Technology, The Netherlands

José P. Zagal – Editor-in-Chief
University of Utah, USA

Harald Warmelink – Technical Support
NHTV Breda University of Applied Sciences, Netherlands

Petri Lankoski – Webmaster
Södertörns University, Sweden

Gaydrie Browne – Copyeditor

ETC Press

Drew Davidson – Editor-in-Chief
Carnegie Mellon University, USA

Brad King – Editor & Director
Carnegie Mellon University, USA

Introduction

Ashley Brown & Rafael Bidarra

In 2016, for the first time, the Digital Games Research Association (DiGRA) and the Society for the Advancement of the Science of Digital Games (SASDG) partnered and decided to jointly host an unprecedented gathering of game-related researchers. The result was the largest ever academic conference on games research: the 1st JOINT INTERNATIONAL CONFERENCE OF DIGRA AND FDG. The conference took place in Dundee, Scotland (1-5 August) and included 6 parallel tracks: *Artificial intelligence*, *Game technology*, *Game design*, *Game production*, *Play studies*, *interaction and player experience*, and *Game criticism and analysis*. In total, there were over 400 submissions, each of which was double-blind peer-reviewed by, on average, three reviewers. These figures, combined with the conference logistic constraints, meant that the program committee was faced with the unenviable task of having to select only the best submissions for each track. Eventually, 188 papers were accepted for presentation, leading to an overall acceptance rate of 47%. As part of the submission process, authors were asked to indicate their interest and willingness to submit a revised version of their papers to ToDiGRA. From those, we sought the most representative highlights in each track and invited, for this special issue, the ten papers with the highest scores given by the anonymous reviewers during the conference review process. Out of these, nine accepted the invitation and, following an additional round of anonymous peer review, there are now eight articles in this issue. This special issue

2 ToDiGRA

of ToDiGRA features a fine selection of polished papers from the joint DiGRA/FDG 2016 conference that together

As part of the submission process, authors were asked to indicate their interest and willingness to submit a revised version of their papers to ToDiGRA. From those, we sought the most representative highlights in each track and invited, for this special issue, the ten papers with the highest scores given by the anonymous reviewers during the conference review process. Out of these, nine accepted the invitation and, following an additional round of anonymous peer review, there are now eight articles in this issue. This special issue of ToDiGRA features a fine selection of polished papers from the joint DiGRA/FDG 2016 conference that together provide a substantial overview of the impressive impact brought about by this unique event. This issue opens with Chris Bateman's examination of how player practices transcend singular titles and how this perspective can help us better understand traditional game design as it acknowledges the existence of communities and networks of knowledge and practice. Next, Mathias Fuchs explores the abundance of decay and ruin in modern videogames and how this might reflect a longing or desire for decay. His analysis is informed by game history as well as art history, psychoanalytic reasoning and the transmedial notion of the

This issue opens with Chris Bateman's examination of how player practices transcend singular titles and how this perspective can help us better understand traditional game design as it acknowledges the existence of communities and networks of knowledge and practice. Next, Mathias Fuchs explores the abundance of decay and ruin in modern videogames and how this might reflect a longing or desire for decay. His analysis is informed by game history as well as art history, psychoanalytic reasoning and the transmedial notion of the megatext. Lynn Parker and Dayna Galloway continue by providing two case studies of how play can be used as a method for encouraging creativity and innovation within a community of practice. Orion Mavridou then provides an argument for examining the intersection between fan studies

and game studies. After all, as he argues, there is a ludic dimension to the collection of activities and behaviours that constitute the identity of a fan. Next, Janne Paavilainen, Kati Alha, and Hannu Korhonen present a detailed overview of 30 common social features found across social network games on Facebook and show how most social features in these games are not used for monetization purposes, but rather for player acquisition and retention. Following this, Malcom Ryan, Dan Staines, and Paul Formosa describe four lenses for designing morally engaging games. Their work is informed by findings from moral psychology and is complemented by an analysis of two recent games using their lenses. Next, Richard Wetzel, Tom Rodden, and Steve Benford describe their iterative development of a set of ideation cards for supporting the design of mixed reality games. Finally, Ea Willumsen provides a reading and analysis of Jason Rohrer's game *Passage* that also illustrates the importance and value that analyzing a game's source code can have. In addition to the regular academic articles, we have invited William Huber, General Chair of the conference, to pen an editorial describing his experience in running the conference. This editorial serves as a way to both preserve institutional knowledge but also for the game research community at large to reflect on our practices and processes.

We hope that you enjoy reading this special issue at least as much as we did putting it together. We thank (the other) Program Chairs, Casey O'Donnell and Staffan Björk, for their assistance in this task.

Ashley Brown & Rafael Bidarra

July, 2017

1.

No-one Plays Alone

Chris Bateman

Transactions of the Digital Games Research Association
2017, Vol. 3, No. 2, pp. 5-36
ISSN 2328-9422
<http://todigra.org>

© 2017 Chris Bateman. Personal and educational classroom use of this paper is allowed, commercial use requires specific permission from the author.

Abstract

The discourses around games have tended to focus upon either their artefactual qualities or the phenomenological experience of play. In both cases, games are primarily to be understood singularly. An alternative approach, related to Foucault's archaeological methods, is to focus upon the manner in which games share player practices with earlier games. This technique can be applied to all eras of games, and is not merely restricted to videogames – indeed, a significant proportion of the player practices of videogames descend directly from the player practices of

tabletop games, especially in terms of the progenitive role of tabletop role-playing games for contemporary digital entertainment. Such player practices can be broadly understood in terms of interface (how the player engages with the game), world (what the player imagines is happening), or the agency practices that connect the interface and the world.

Three propositions concerning the relationships between fictional setting and designed rule systems within games are explored, the last of which stresses the idea that ‘no-one plays alone’ i.e. that all play entails continuity of its practices over and above variation of those practices. These propositions are used to demonstrate three aesthetic flaws that are peculiar to, or particularly relevant for, videogames. This in turn leads to a discussion of the ways that commercially successful games have always proceeded by leveraging the existing networks of practice. The result is an alternative perspective for game design, game scholarship, or game critique, one that foregrounds the role of player practices.

Keywords

player practices, aesthetics, play aesthetics, games, fiction, rules, lineages

I. Player Practices

The claim that ‘no-one plays alone’ draws attention to the idea that play, wherever it occurs, is conditioned by prior experiences of play. As such, no player, no game designer, and no-one who studies play and games does so without belonging to several lineages of play (Bateman, 2016b) that connect all play activities into a diverse and dispersed web of influences, a set of cultural traditions conditioned by (and, over geological time, conditioning the development of) the aesthetic motives for play (Bateman, 2016a). This paper presents a set of three rules (or, better, rubrics) that appear to govern the relationships between the rule-governed aspects of games and their imaginative worlds. These in

turn are used to highlight aesthetic flaws relating to these propositions. Before this can be discussed, however, it is necessary to discuss the relationship between rules and fiction, how this has been presented within the discourse of game studies, and how this relates to game design practices.

Traditional game design descends from the practices of tabletop game design, that is, writing rules, now generally called ‘game mechanics’ (Sicart, 2008), that are then implemented into programmed systems. This method works, and is widely used in the digital games industry which uses a document (or more recently, an online surrogate) to organise the rules guiding development. However, thinking about game design purely as rules misrepresents the practical aspects of the design process by obscuring the relationship between games and players, a point brought into focus by Aarseth’s (2007) critique of the concept of an ‘ideal player’ implied by the rules.

Furthermore, games are never invented from nothing: they exist as variations of successful player practices. This way of understanding games – in terms of the player practices passed on between interconnected lineages of games – runs contrary to many conventional methods of thinking about games, both in commercial development and the discourses around it.

For instance, in their seminal text *Rules of Play*, Salen and Zimmerman (2003) usefully deploy three distinct schemas to carve games into rules (game mechanics), play (experience), and culture (context). Looking at games from the perspective of player practices necessarily *interrelates* these three elements: the culture of playing in a particular way is shared by both the artefacts *and* the players, who are in turn organised into a (loose) community.

For the purpose of this paper, a ‘player practice’ is anything that a player has learned to do consistently. This includes, for instance, using the right stick on a controller to move the camera object, pressing a

button to jump, smashing boxes to look for power-ups, and imagining that moving an animated ‘doll’ in a depicted space entails ‘entering’ the implied fictional world. The underlying use of ‘practice’ has a long and distinguished history in philosophy, far beyond Foucault’s (1972) discussion of discursive practices that underpins this paper, arguably all the way back to the notion of *praxis* in Aristotle.

In direct parallel to Foucault’s archaeological methods, a focus on player practices entails identifying networks of connectivity. For Foucault, statements could be linked together into networks, and the relationships between those statements within the network characterized “discourse itself as a practice” (1972, p. 42). Foucault’s ‘discursive formations’ are thus descriptions of practices that condition and influence what can be said in any given ‘enunciative field’ e.g. biology, natural history, mathematics – they are the networks of statements *and* the practices that relate those statements. Mirroring Foucault’s terms, studying player practices highlights ‘play formations’ that condition and influence how games are both made and played within various ‘fields of play’, the implications of which will hopefully become clear as this paper progresses.

This notion of a player practice should not be confused with the (related) concept of a *community of practice* advanced by Lave and Wenger (1991). Although this *also* descends from the philosophical discussion of practices, and thus has significant similarities, Lave and Wenger’s concept is expressly about learning within a group that is personally connected by some means. Conversely, a player practice can pass down a lineage of games without the players and game developers ever forming a community of practice in Lave and Wenger’s sense. This is the case precisely because player practices can be embodied in game artefacts *as well as* in what players learn from playing with such systems. Indeed, core to the very idea of a player practice is that the process of making games entails learning player practices and then using them normatively to prescribe the construction of a new game, whether consciously or otherwise.

As noted above, thinking in terms of player practices is a significantly different perspective from thinking about games as artefacts comprised of rules. One particular academic approach has been to treat games as comprised of ‘real’ game mechanics, which can be modelled mathematically, and a ‘wrapper’ of fiction, which certain scholars contend can be treated as having only secondary importance. This constitutes a bias with ontological (‘mechanics are what is real about games’) and phenomenological (‘mechanics are secondary in the play experience’) aspects, one that can be found in Eskelinen (2001), Aarseth (2004, 2012b), Juul (2005), Kirkpatrick (2011) and others who claim that the experience of fiction will “fade into the background” once “the engagement with the game becomes an obsession with the game goals and mechanics” (Aarseth, 2012b, p. 490). While this bias has in no way tarnished the quality of the academic work such scholars have conducted, I have nonetheless suggested that this peculiarly dismissive attitude towards imagined experience is rooted in the play preferences of these scholars, and cannot be taken as universal; indeed, it can be misleading if it is taken as axiomatic (Bateman, 2013a).

A significant problem with the view that games are ‘really’ crunchy mechanics and that the player ultimately discards the fictional world – expressed by Kirkpatrick as becoming “just a backdrop” (ibid, p69) – is that the specific game mechanics tightly constrain the ‘theme’ that can be attached. Game designers cannot simply treat the functional elements of a design as something that can be transplanted willy-nilly without utterly mauling the process of game design. This ‘wrapping paper fallacy’ (Bateman, 2013b) which treats fiction as interchangeable and irrelevant (because only the systems are assumed to matter) conceals the importance of imagined experiences for all play. This and other forms of what I have rather theatrically dubbed ‘fiction denial’ (Bateman, 2013a) obscure the material, social, and phenomenological foundations of play. If we want to understand the play of games of all kinds, we need to be open to understanding their player practices, both in terms of interface and agency, and *also* in terms of their imagined worlds, even though the latter matters more to some players than others.

Contemplating games from the perspective of their player practices is largely impossible while we treat a game purely as an artefact. Instead, we must be open to appreciating not only the way individual games are played, but the connectivity between the player practices of one game and those of the lineages it connects to, a method that can be related to Foucault's approach to analysing discourse (Foucault, 1972). To fully explore this, we need a perspective that stresses that play is never a solitary activity, since no player can play in complete isolation from the practices of others.

II. The Rules of Game Worlds

One approach to game design, adroitly discussed by game designer Dan Cook (e.g. Cook, 2007) is built upon productive reductionist principles – splitting games into components. This can be considered *bottom-up design*. I use this kind of technique often in board game design and occasionally in videogames, and it's an effective approach in many instances. An alternative is *top-down design*, whereby the world is already established and the open question is how to support play within that setting. This is a technique I have also used, particularly on projects where the fictional world is determined in advance e.g. license adaptations.

In the case of bottom-up design practices, game developers have to be careful since by being the conduit for the final design and world, they can introduce aesthetic problems that cannot be anticipated until the artefact under development can be put into contact with players (see Section III below for examples). Such problems are typically solved in successful projects through iteration: people are sat down with the game and the developers learn how new players come to engage with it, using what is observed to adjust the game's content (both mechanically and in terms of world or setting).

While the discourse of game designers provides ample opportunities for an exchange of ideas pertaining to the designed systems of games (i.e. their game mechanics), the question of the relationship between those systems and the fictional content of game worlds is one that remains ill-defined. In an academic context, it is not surprising that this has remained largely on the side-lines since the common reluctance to take fiction entirely seriously (as already discussed) makes it harder to explore the consequences of the central role of fiction both in games (Bateman, 2011) and in other artworks, a point discussed in depth by philosopher of art, Kendall L. Walton (1990).

However, a discussion between myself and Dan Cook within the comments of one of our blogs (Bateman, 2013b, and Cook, 2013) opened up new perspectives on the relationship between ‘rules’ and fiction, and suggests three propositions pertaining to their interrelations that are worth considering more closely. It is these three propositions that I wish to discuss in the section below, before moving to the aesthetic consequences of these premises, and the implications for our understanding of both games and game design.

I shall term these propositions the Rules of Game Worlds, and identify three such rules, which are perhaps better understood as guidelines or rubrics. This discussion proceeds in accordance with my claim that rules and fiction interrelate since the former depend upon the latter and the latter upon the former (Bateman, 2011). Thus, while we can distinguish between setting and system, we have made an error if we think this is the only way or the best way of conceptually organising the artefactual basis of played experiences.

Incongruous Settings

The first problem Cook identifies is when the setting encourages players to understand the play of the game in a way that is contrary to how the mechanics function. Cook suggests that the setting “activates schema in the player that fail to ease understanding of the system dynamics”

(Cook, 2013, no page). This gives us the first proposition concerning the relationship between rules and fiction in respect of game worlds:

First Rule of Game Worlds: Setting and mechanics must accord.

Ordinarily, the game designer wants the player to learn to play easily according to the mantra for commercial success popularised by Nolan Bushnell “easy to learn, hard to master” (Bogost, 2009, no page), and this is best attained by aligning setting and mechanics. A notable exception to this rule occurs when a game is intended to discombobulate the player, as was attempted in the insanity cutaways in *Eternal Darkness*’ (Silicon Knights, 2002).

This word ‘schema’ that Cook deploys is taken from psychology, e.g. Piaget (1926), although it comes from philosophy prior to the divorce between the two fields, and was coined by Immanuel Kant (1781). The idea is that we have in our minds certain ways of understanding certain situations – schema, or mythologies (Bateman, 2012, 2014a) – and these come into play associatively since our memories are associative via the hippocampi (Bateman, 2014b). As a consequence, it is usually bad practice to have players’ prior associations disrupt their understanding of a game’s systems, that is, the game mechanics. Players might eventually overcome this and learn the way the game works, but in general an incongruous setting remains unsettling even after the game is learned.

Cook (2013, no page) gives an example from his game *Triple Town* (Spry Fox, 2010):

In Triple Town, we initially made the bears into children. Mechanically, the bears were obstacles that you wanted to remove. When they were children, many players activated the schema that they should be protected. Expectations did not match mechanics. Confusion, irritation and uneasiness results.

Part of my purpose in writing *Imaginary Games* (2011) was to stress that when we talk about the aesthetics of play it matters whether setting and mechanics (fiction and function) align. To be aesthetically satisfying to

a player, it is vital to allow for this since (as Cook notes) the player's experience is always filtered through their world. An odd consequence is that a player's prior experiences are as much a part of their play as the game itself – and there is a style of play (and a set of design approaches that correspond to it) that makes the dominant setting not that of the fiction but of the mechanics.

Mathematics Imply Settings

The second problem Cook identifies is presented as an opportunity: “self-contained systems of value” provide opportunities for “a wider variety” of settings (Cook, 2013, no page). In fact, Cook notes that certain styles of games (puzzle games, strategy games, numbers-heavy combat, to use examples that I had previously offered to him) are playable *without setting*. This leads Cook to the point that something like chess, which is mathematical (topological) at base, is easier to transpose between settings than a game that depends on contextual content.

However, we should be careful about making assumptions about the idea of games without setting, that is, without representation since it can be objected that mathematics are already a representation (Yablo, 2002). As a result, mathematical games *already* have a ‘setting’ of a certain kind. This is what is sometimes called an ‘abstract’ theme, although this can be a misleading terminology. The implication of recognising the representational aspects of mathematics is that when a new fictional setting is applied to, say, chess, we aren't so much adding a setting that wasn't there, we're actually *merging* its mathematically-implied ‘abstract’ base-setting into a fictional one. The chess mechanics are a little mechanical sub-world with its own representational implications that are not negotiable in the same way that any fictional content merged with it might be. Even if you changed the names of the pieces to X1, X2, X3 etc. the rules of chess would still feel like a power struggle because that's what they mechanically represent.

From this follows the second proposition concerning the relationship between rules and fiction in respect of game worlds:

Second Rule of Game Worlds: Any and all mechanical sub-worlds must merge with the game world.

What made the wrapping paper fallacy appealing was the recognition of two utterly distinct worlds – the abstract world of the mechanics, and the representational game world. But the former can only be removed from the latter if in itself it successfully supplies a sufficient base-setting. Chess does – it’s a spatial contest, and anything that supports that metaphor will merge with it, even contexts outside of battle like *The Simpsons* (in part because metaphors of conflict are transposable into any human or animal relations). But you can’t strip (say) bingo or a point-and-click adventure down to a plausible base-setting because the core play isn’t forming a self-contained system in the same way. Bingo relies upon its community experience (no bingo player could desire a single-player variant) and adventures rely upon their fictional content in a way that is effectively case-by-case rather than a defined and reusable system, even though the lock-and-key puzzle approach does form such a system, and recurs in many kinds of game.

It might be objected that the second proposition is the same as the first, that setting and mechanics must accord. However, not all mechanics give us base-settings, only those that form what Cook terms “self-contained systems of value” (2013) or something like it. Furthermore, it is possible to merge any number of such systems provided they accord with the fictional world. Indeed, playground worlds (Bateman, 2006a) often add games-within-games because they can easily be merged; the 90s style arcade games in 90s-set *San Andreas* (Rockstar North, 2004), for instance, or gambling in *Red Dead Redemption* (Rockstar North, 2010). Merging is also possible in more aesthetically satisfying ways e.g. the circuitry-based influence game within the robot-massacre classic *Paradroid* (Braybrook, 1985), which makes the game so memorable because the ‘mini-game’ in itself gives the paradigm of the entire

experience of possessing and discarding droids, a style of play that went on to influence the first *Grand Theft Auto* (DMA Design, 1997).

This second rule also challenges the ‘two distinct worlds’ implied by ‘rules vs. fiction’ (Juul, 2005). Many games are one coherent fictional world and many congruent mathematical/mechanical worlds that have been merged with it, and often (but not always) with each other. Games that allow you to build or tinker with devices as well as deploy them for racing or combat also show this merging, from the 80s tabletop games like *Car Wars* (1980) and *BattleTech* (Wiesman et al., 1984) to *Forza* (2005) and *Kerbal Space Program* (2011) now. It is misleading to think that the mechanical world could be built and only then ‘wrapped’ in cars, mechs, or spacecraft. Rather, at all stages the fictional world and the mechanical worlds must merge congruently, and often it is the fictional setting that informs the design of the mechanical sub-worlds.

Nonetheless, each base-setting for each mathematical sub-world is also reusable, just as character archetypes and plot tropes are reusable in narrative fiction. This ability to reuse patterns, however, does not and cannot make the base-settings more fundamental than the fictional worlds, although they can certainly be more important to a subset of players.

Play as a Practice

The last of the problems Cook identifies is particularly relevant to anyone with an interest in games and play. In my remarks about the wrapping paper fallacy (Bateman, 2013b), I provided the example of a sporting game as antithetical to this conceptual viewpoint because the mechanics – while necessary to their play – aren’t the locus of the player’s enjoyment. Cook (2013, no page) summarizes this issue nicely:

You can retheme/reskin a sport and it loses the vast majority of its value. The culture and the community around the game has turned into an intricate, many layered game of its own. The chants, the commentators, the game

night scheduling, the tribal associations are the real game. To copy out the core mechanics and give them a new game is like copying out raw DNA and thinking you have a complete ecosystem of living and breathing organisms.

Cook suggests that building a new game bottom-up is especially challenging as it's like "terraforming a barren world" where you must "build up culture and community from scratch" (2013, no page), stressing the immense difficulty of this task. This is correct, when considered from a bottom-up perspective. However, from a top-down perspective the problem seems radically different: the game designer still needs to build up their own culture and community, but they begin with 'neighbouring' fictional world cultures to provide 'settlers'. It's something that marketing departments recognise, although generally fail to know how to productively influence. People enjoy certain kinds of fictional worlds, and seek their entertainment within those media that deliver those specific kinds or anything like them.

The reason generic fantasy and urban horror novels are good sellers is that they already have their collective culture and community. Genre fiction forms superset fictional worlds – what I call, after Charles Segal's (1986) observations on the interconnectedness of Greek mythological stories, a *megatext* (Bateman, 2013). Whatever the nuances of an individual book series, its mythology is rooted in a wider frame of reference, one that spans many other books and series that at first glance are entirely isolated. Mash-up movies like *Shrek* (Adamson and Jenson, 2001) – and mash-up fighting games like *Soulcalibur II* (2002) and *Super Smash Bros.* (1999) – show that they aren't as isolated as they may at first seem – they are 'close enough' that other worlds can be made out of collisions between their otherwise isolated content. What's more, there are connections between otherwise isolated fictional worlds via the people engaged with them: both the readers and the writers of fiction genre participate in the practice that sustains that genre.

Videogames are no different, but as well as participating in the practices of world (fantasy, science fiction, crime) players participate in the interface and agency practices that can also be described in terms of

game mechanics. The first-person shooter (FPS) is not defined by its perspective but by the practices of those players who participate in the FPS culture. The games certainly do affect this – *Halo: Combat Evolved* (2001) significantly altered the practices of the FPS (dropping the inventory in favour of just two weapons, adding vehicles), as did *Call of Duty 4: Modern Warfare* (Infinity Ward, 2007) by putting RPG-like advancement mechanics into the multiplayer mode.

However, changes to mechanics only become changes to practices when players actually like what changed and then seek more of the same. Also, some changes fork the practices into two different cultures, as *Battlefield 1942* (Digital Illusions, 2002) and its successors have done. The words used to form genre terms don't reflect the practices very well, because as *players* (if not as scholars) we're trained to see games in boxes like 'FPS' that seem to pick out the important feature but only describe how that practice split from its predecessors. The reason for the name 'first-person shooter' is that most shooters in the 80s were rendered in 2D, so the 3D first-person perspective was a step in a new direction.

From this follows the third proposition concerning the relationship between rules and fiction in respect of game worlds:

Third Rule of Game Worlds: No-one plays alone.

This, indeed, is a stronger proposition than the previous two, since it applies to all games, and indeed to all fictional media. Even the most dedicated solo player is embedded in interface, world, and agency practices that are sustained by a community. Even a designer who makes a game that only they will ever play relies upon many others to facilitate the making of that game (especially on an industrially manufactured device like a computer!) as well as the communities that nourished the games that taught them the practices of play they riff off. No-one plays alone, because to learn to participate in the practices of play – whether narrative, mechanical, or both – requires players to have been part of a

wider culture. Indeed, Miguel Sicart (2009) suggests that to be a virtuous player, you need to recognise your relationship with other players.

This rule seems odd, since it doesn't seem to be about the relationship between rules and fiction, mechanics and setting. This is because contemporary views of our world have misled us into thinking everything is explicable in isolation. This is a hangover from the Victorian sciences and their mythology of the universe as a giant mechanism (Bateman, 2012), a view that, while often useful, can obscure the vital connectivity between things. Terms like 'emergent' and 'superorganism' try to hold onto this older perspective by ignoring complex networks and treating them as still a single thing i.e. as still isolated provided we change the scale that we look at them. There's a place for this, but there's also a place for exploring the network connections themselves, and we are currently at a time where we need the latter perhaps more than the former (see Bateman, 2014).

New game designers often seek to amaze the world with their utterly original design – which then inevitably flops. I have certainly had this experience several times. This happens primarily because playing games is not simply about isolated artefacts ('the game') that are played by individual players. When seemingly original game concepts take flight it's because existing communities of players pick them up – one games journalist, for good or ill, is always talking to a community of players who must share some commonality of practice with that writer or they would not read them. This can be a common games platform (even in the 80s, games magazines succeeded primarily by being about one kind of microcomputer), or shared aesthetic values for play, or just shared values for talking about the practices of play. Specific examples can be found in the context of 80s arcade player practices (Bateman, 2015b) and the way contemporary games share continuity of practice with the last five millennia of play (Bateman, 2015a).

Cook's terraforming metaphor is only lacking the idea that a new place to live creates a new practice from roots in *existing* practices – the

terraforming is just a means to an end, and that end is settlement (something Cook clearly recognises). Understanding that your ‘settlers’ are choosing between different places to settle – different games to play – helps game designers recognise that since no-one plays alone (or, to put it another way, no-one plays in a vacuum) game developers are always recruiting their metaphorical settlers from other game worlds. A few are novelty seekers, but most find it easier to get into a game if originality is tempered with familiarity, both in the mechanics and the setting.

III. The Aesthetic Flaws of Games

The guidelines for creating game worlds that came out of my discussions with Dan Cook are practical principles for how the fictional world of a game (where its narratives will be set) connect with its mathematical systems (where its mechanics operate). These propositions might have more general forms that could include other artworks, but for now let us simply accept them as descriptive ‘rules’, so they can guide an investigation into how games can produce aesthetic flaws of kinds that other artworks simply do not.

Each of these propositions can be used to reveal a specific kind of aesthetic flaw unique to games – and indeed, can reveal a schism between different aesthetic values for play that leads to different kinds of aesthetic flaws. This is key to the discussion that follows, for we must appreciate that ‘aesthetic flaw’ is not an absolute claim, nor is it ‘merely subjective’: an aesthetic flaw occurs between a game and its player as a direct result of a difference in values (cf. Bateman, 2014). The arguments that follow are phenomenological, and based on observations of players, as well as observations of my own play, and are presented in the manner of Wittgenstein (e.g. 1953) more than any explicitly empirical methodology, despite entailing some empirical observations.

Ruptures

The first kind of flaw that can occur in the aesthetics of play is the one that has produced the most heat and least light in discussions of games. It is intimately tied up with the First Rule, that ‘setting and mechanics must accord’, or as I might equivalently say in line with Juul (2005), that the fiction and the rules must accord. Why does this constitute a rule?

The crucial point to understand is the one raised in connection with the Second Rule i.e. that the rules of a game, its mechanics and systems, are representations of a very particular kind – namely mathematical representations. This is important to appreciate, because we do not often acknowledge that numbers and formulae are at heart representative, despite this being well-established in the philosophy of mathematics. The number ‘three’ is a representation of cardinality: every collection of three objects, like the three rules of game worlds, is thus represented by the number three. Similarly, the bell curve ‘shape’ we depict by graphing the Gaussian function of (say) two six-sided dice represents the distribution of results from such a roll. It is precisely because mathematics can and must represent that the sciences that deploy equations (such as physics) are able to derive formulae that represent phenomena like gravity and electrical flow.

But of course, every game is also a representation in the same way that other artworks are: using Walton’s (1990) terms, they are sensory depictions, like paintings, sculpture, and music, or narrations, like books, poetry and radio plays, or hybrids of the two, such as television, comics, and films. This is precisely where the trouble starts, because whenever there are multiple forms of representation working together, there is the possibility of different aesthetic values clashing. This is precisely the unrecognised problem at the root of the mythic hydra that is the purported narratology vs. ludology skirmish (cf. Frasca, 1999, Aarseth, 2012a) and in recent fights over what is confusingly termed ‘formalism’ (cf. Lantz, 2015) but which seems broadly equivalent to what is

sometimes called ludology or ludocentrism or some other ludo-prefixed neologism.

A rupture occurs when a player is enjoying a game in one aesthetic mode but their imaginary experience is interrupted by an intrusion in another mode – and there are two common examples. The first occurs for any player whose aesthetic values have formed around the mathematical representations of a game – broadly, the ludology position as Kirkpatrick (ibid) presents it. Such players resent the inclusion of animated film clips (cut scenes or cinematics) since these elements do not form part of their aesthetic experience, per se. They cause a rupture in the mathematically-structured world they are enjoying by ‘forcing’ the player to operate in a narrative mode. Equivalently, a player whose experience was primarily within a depictive or narrative mode will experience a rupture whenever the mechanical system bluntly forces its way into awareness, for instance, by encouraging the player to make a decision with mechanical benefits that does not fit the imaginary world they were playing within.

Note that the same game could produce a rupture in opposing modes for different players, and that what constitutes an aesthetic flaw for someone from a Kirkpatrick-style position could be an aesthetic strength for others. Despite the interruption of the mechanical play, *Final Fantasy* games from VII onwards (Square, 1997) are enjoyed by many players precisely because the extensive use of narrative cut scenes heightens the sense of connection to the world, even though this also ruptures the game experience for others.

Inelegance

The second way that games can manifest aesthetic flaws relates to the Second Rule of Game Worlds, that every mechanical ‘sub-world’ must also align with the fictional world of the game. The point here is that for most games there is not a single mechanical system feeding into the fictional experiences but rather many. As an extreme example, consider *Cooking Mama* (Office Create, 2006) with its disparate, mechanically

unrelated cooking mini-games that are still united within a fictional narrative of cooking such-and-such a meal. Similarly, the classic Access Software games *Beach Head* (1983) and *Raid Over Moscow* (1984) consist of a linear sequence of self-contained sub-games with only the number of soldiers remaining carrying on from one stage to another. The component games do merge with a common fictional world – but this once-popular structure tends to feel uncomfortably clunky by contemporary aesthetic standards.

Players preferring the mathematical mode perceive *inelegance* as a direct consequence of any discontinuity between sub-worlds, such as the previously stated examples. When the systems themselves are the elements of primary importance to creating the fictional world of play, elegance is experienced if the core mechanics conspire to effortlessly deliver that world, to produce more from less. Many strategy games are afforded this praise, although the original *Super Mario Bros.* Nintendo (1985) is an interesting example of elegance that does not primarily rest upon decision making. A design can be said to ‘lack elegance’, which is to say, expressive simplicity, whenever contrary conditions hold, which to be honest is the norm and not the exception in contemporary games.

Inelegance is thus the awareness of tension in the mechanical supports to a fictional game world, a sense that the pieces do not fit together like well-oiled cogs. There does not appear to be an equivalent problem for those experiencing a game in a narrative or depictive mode, although the excess of unrelated mechanics characterising inelegance is likely to cause a rupture in such a case, and inelegance may be experienced along with the rupture if the player has sufficient appreciation for mechanics.

Perplexity

The final kind of aesthetic flaw I want to draw attention to here is of a slightly different nature, and relates to the Third Rule: no-one plays alone. The essence of this rule is that an artefactual reading of games, treating them as isolated objects, is an incomplete reading of a

game (Bateman, 2015b) because every game that has ever been made, or ever will be made, is situated in a network of player practices that prepare the player for that experience (Bateman, 2015a). The clearest example is the aforementioned FPS, the control scheme for which is so ingrained among the majority of contemporary players that games using modified forms of this scheme generate aesthetic displeasure. This is what I am calling *perplexity*: the experience of re-learning what has already been learned differently, or learning under conditions of insufficient information e.g. a bad tutorial.

It is perhaps worth recognizing that many players of the mathematical aesthetic persuasion are also lovers of puzzle-solving, the enjoyment of which occurs within the imagined world and not to any significant degree in the mechanics. The classic text adventure was enjoyed by many of the same players who now enjoy complex strategy games. Such players will enjoy picking up a game and learning to play it without instruction because they possess what I term confusion endurance (Bateman, 2014b). However, such experiences are not what I am calling perplexity, and neither is being stuck on a puzzle usually an example of perplexity (unless the player knows what to do, but cannot comprehend how the game expects them to implement the required action).

Perplexity occurs because two sets of player practices – those of the player, and those of the game’s creators – have collided instead of aligning. The most typical example occurs when the people who make the game insufficiently address the monumental problem of teaching others to play (which is also the pragmatic reason that most mainstream videogames have very similar control schemes). An interesting case is *Metroid Prime* (Retro, 2002), which has interface practices utterly different from other first-person shooting games. Players who give up while learning the new control scheme have experienced perplexity in my sense; those that master the practice required by this control scheme, on the other hand, are likely to appreciate its uniqueness.

IV. Player Communities

Excluding young children, all players come to every game with their own pre-existing player practices already well-established. This small point has non-trivial consequences! *Defender* (Jarvis and DeMar, 1981) was difficult for arcade players to learn because its interface practices were nothing like the other arcade games of the late 70s and early 80s. The computer strategy game *Steel Panthers* (SSI, 1995) uses a hex map because thirty years earlier Avalon Hill's second edition of *Gettysburg* (1961) established the benefits of these over square maps. id Software's *DOOM* (1993) and *Quake* (1996) used arrow keys rather than WASD because movement in most Western computer RPGs up to then had been controlled that way, with mouse-look creeping in as an optional alternative interface for games mounted on the Quake engine. Changes were incremental, not revolutionary, because utterly innovative practices become a barrier to play, creating negative word-of-mouth, a high risk of bad reviews, and thus no eventual community.

Community is the big issue here since, as already noted, no-one plays alone. Commercially successful game developers (and indie game devs who earn enough to feed themselves) have in common that they either made a game for existing communities of players, or they founded a new community around their game. In all cases, the player practices are contiguous with earlier player practices – either in terms of interface, fictional world, or agency (which is to say, the intersection between the two). The three work together, and all three are important – although in different ways for different players, who may experience a variety of aesthetic flaws as a result of their preferences.

Clashes between interface practices create perplexity; clashes between world and agency create ruptures; clashes between agency and interface generate inelegance. All discourage players from engaging in a new community, but not all are strictly game design problems (rupture in particular is often a narrative design issue). Successful game design doesn't have to minimise all these aesthetic flaws, because not all players

are bothered by rupture, not everyone is sensitive to inelegance, and some players willingly persist in the face of perplexity. But it is the last of these flaws – perplexity – which is the greatest problem for games courting a community of players, because players can adopt a new game easily if its player practices are close to those they already know, and this applies to interface, world, and agency practices.

If a game's interface practices cause perplexity (by being different from player expectations, founded on prior experiences) there is a barrier erected around the game and only a minority of players will get through it. Indeed, contemporary games have developed new community practices to offset this exact problem e.g. wikis that provide detailed information about player practices expressed as game mechanics, and guides that introduce players to new practices gently. Even so, successful new games achieve their success by taking advantage of existing player practices, and only vary them to a relatively small degree, such that players can switch from an existing player community to that of the new game with minimal complications.

A few examples may be helpful. Blizzard's all-conquering *World of Warcraft* (2004) developed its practices from those of the Multi-user Dungeons (MUDs), a unique kind of game exquisitely documented by Aarseth (1997). Blizzard thus did not create a new community but rather absorbed others that were already engaged in very similar player practices. Firstly, the DikuMUDs that had near-identical practices to WoW but used a text interface, followed by much of the MUD community in general, including the other early 'graphical MUDs' like *EverQuest* (Sony, 1999). Secondly, computer RPG players, since they had very similar practices in interface, world, and agency, but usually played in single-player worlds. Thirdly, tabletop role-players, from whose player practices all these other communities descended (Bateman, 2011). *World of Warcraft* effectively monopolised the role-playing game lineages, and their communities, through high production values, careful community management, and a buffed-up version of the practices of *Dungeons and Dragons* (Gygax and Arneson, 1974). It ultimately

became such a huge player community that even the wellspring of its player practices, D&D, began to copy it, with its fourth edition rules clearly geared to appeal to the community that WoW had stolen away from the table (Bateman, 2011).

Similarly, Mojang's monolithic mega-hit *Minecraft* (Persson, 2009) was readily available to a hugely diverse community of players because it used a standard interface, one that descended from *Quake's* mouse-look combined with inventory mechanics from the computer RPG lineage, those largely added to the pool of player practices by the seminal *Dungeon Master* (FTL, 1997). *Minecraft* did not succeed by monopolising existing communities, however, but by being able to be played by a huge pool of players (thanks to its low-perplexity 'standard' interface, and a strong supply of wiki content to bridge the gap with its high-perplexity crafting system). Once it was rolling, it then supported hugely diverse player communities thanks to the open configuration of its numerous regimes of play – from peaceful construction, to vicious permadeath that descends from early digital D&D variants such as *Rogue* (Toy and Wichman, 1980).

The significant growth in community was also fuelled by the ingenious early access business model, which *Minecraft* both invented and popularised. Unlike later schemes, Persson offered rising entry fees from a very low starting point – about \$10 when I got it, I think it'd been half that when I first saw it, and later it was \$20 and \$30. Part of my buying decision was precisely the thought that I didn't want to pay more later, and I'll wager I'm not the only one who was drawn in this way. This is one of two key reasons why *Minecraft* had to be an indie project, and couldn't have come from a publisher. The other is its low-fi visual aesthetic, very much resembling my indie flop *Play with Fire* (2006b) three years earlier, although to my knowledge there is no direct connection between the two games, nor to *Minecraft's* immediate progenitor *Infiniminer* (Barth, 2009).

In *Minecraft*'s case, we can see how its success did not primarily come from its game design ingenuity, which merely provided the seed of appeal around which its communities gathered. Its success was rooted to continuity of player practices from the lineages of FPS (for interface) and RPG (for world and agency). *Minecraft* cross-bred and thus hybridised the two key videogame lineages, but it was its inventive business model that provided a means of growing a new community organically and thus had a far bigger part to play in its success than design innovation. This is in no way a criticism. I have enormous admiration for the variations to player practices that *Minecraft* introduced, which have still not settled into any stable configuration in the games community at large.

Equivalently, superior community maintenance was more important to *World of Warcraft*'s success than design innovation, of which it had very little – and not because Blizzard isn't full of extremely capable designers. A gainful comparison can be made with id Software, the only company to get significant traction from the shareware business model. It innovated the 'standard' interface – but it built its community on pre-existing interface practices, from the Western computer RPG lineages (as noted above), and then grew a community with a non-standard business model. Only when that community was established did id Software get a chance to spread the now-standard mouse-look FPS interface (which also leads to twin stick controls on consoles, via other developers' variations).

V. Conclusion

Traditional game design works much of the time because game designers are already part of a network of practice and thus can effectively replicate and vary those player practices. Those capable of abstracting these practices into 'rules' or 'game mechanics' inevitably end up in the role of game designer since they can communicate play in the written form which helps to hold big projects together. (Small teams can avoid documentation entirely in many cases, but larger games have no other

reasonable option). Nonetheless, the work of games designers will succeed or fail according to how well they maintain and vary established practices. When it fails, it is often because of unresolved conflicts over precisely which practices are being replicated or modified – especially in traditional publishing relationships. But successful game design has always been embedded within existing player communities, and new directions have worked far less often than variations on known themes, no matter what players say about what they think they want.

Traditional marketing is an even less reliable method than game design since the openly stated strategies (such as target demographics) utterly miss the point about why spending money can fuel the formation of communities. Players are already inside the communities for the various big game brands (Mario, *Call of Duty*, *Mortal Kombat*, GTA etc.) but can be enticed to play games with a similar interface, world, or agency. Meanwhile, world-focussed media brands (Middle Earth, Disney, Lego, *Star Wars*, Harry Potter) provide further opportunities to bring existing player practices to their (largely zero-agency) communities, offering substantial commercial benefits – at a substantial price. Indies can't afford to do this, so they typically just rip them off – just like the big companies, actually! *Tomb Raider* (Core, 1996) comes from Indiana Jones, just as *Halo* comes from *Aliens* (Cameron, 1986) with a Larry Niven twist, and *Call of Duty* (Infinity Ward, 2003) comes from *Medal of Honor* (DreamWorks, 1999), which comes from *Saving Private Ryan* (Spielberg, 1998) – both concurrent Spielberg-produced projects. If these examples of network connections for world-practices seem trivial, recall that even the much-vaunted *Braid* (Blow, 2008) wholly depends upon borrowing Mario's player practices.

Foregrounding player practices is an antidote to the wrapping paper fallacy and other forms of fiction denial that treat imagined experience as secondary or irrelevant, but more importantly it allows us to better understand both the differences between players and the intimate connectivity between games and their lineages. Just as Foucault (1972) re-evaluated discourses in *The Archaeology of Knowledge* and elsewhere

to explore the practices that allow certain discourses to attain to knowledge, thinking about games in terms of their associated player practices allows us to better understand what we are dealing with when we are making, studying, or critiquing games.

The three aesthetic flaws discussed above – rupture, inelegance, and perplexity – demonstrate how interactions between interface practices (e.g. controls, HUDs, online connections), world practices (representation, fiction and imagination), and agency practices (that interrelate the two) generate problems for certain players according to their personal aesthetic values on the one hand, and the player practices they have inherited from playing earlier games on the other. Indeed, these two elements are closely related, since the aesthetic values players possess seem to be inscribed by the player practices they have participated with at least as much as they are related to their temperament.

These aesthetic flaws aren't a complete list of the ways in which a game and a player could be aesthetically misaligned. However, they serve to illustrate why certain arguments about games operate unproductively since they proceed from different aesthetic presumptions – typically a focus on the game's mathematical systems versus a focus upon the depictive or narrative aspects of its fictional world. There is no coherent argument for claiming superiority or even 'home field advantage' to either of these modes, because games operate in fairly unique ways from other media whichever aesthetic mode we consider. It was never a case of finding the 'right way' to analyse games: there were only ever alternative methods.

I hope this brief enquiry provides some illumination on a subject that too often lapses into dogma, and illustrates once again the core principle of all my work in games, whether as researcher, philosopher, or game designer: play is a diverse activity, and its aesthetic appreciation can never be reduced to simple master principles. Rather, successful games attain to that state because their artefacts are built around variations on

the existing player practices. That's what game design has always been about – talk of 'game mechanics' is only a medium for the exchange of ideas. We should not let it distract us from acknowledging our intimate familiarity with the player practices of successful games, because we are all a part of at least some of these communities and networks, and always have been.

References

- Aarseth, Espen (1997). *Cybertext: Perspectives on Ergodic Literature*, Baltimore, MD: John Hopkins University Press.
- Aarseth, Espen (2004). "Genre Trouble", *Electronic Book Review*, retrieved from <http://www.electronicbookreview.com/thread/firstperson/vigilant> (retrieved 30 May 2013).
- Aarseth, Espen (2007). "I fought the law: Transgressive Play and the Implied Player." in *Situated play: Proceedings of the Third International Conference of DiGRA*, pp. 130-133, Tokyo, Japan: University of Tokyo.
- Aarseth, Espen (2012a). "Ludology" in Mark J. P. Wolf and Bernard Perron (eds), *The Routledge Companion to Video Game Studies*, Abingdon: Routledge, pp. 185-189.
- Aarseth, Espen (2012b). "Ontology" in Mark J. P. Wolf and Bernard Perron (eds), *The Routledge Companion to Video Game Studies*, Abingdon: Routledge, pp. 484-492.
- Access Software (1983). *Beach Head* [Multiplatform game], Salt Lake City, UT: Access Software.
- Access Software (1984). *Raid Over Moscow* [Multiplatform game], Salt Lake City, UT: Access Software.
- Adamson, Andrew and Jenson, Vicky (2001). *Shrek* [Film], Universal City, CA: DreamWorks Interactive.

Avalon Hill (1961). *Gettysburg, Second Edition* [Tabletop game], Renton, WA: Avalon Hill.

Barth, Zachary (2009). *Infiniminer* [PC game], no publisher.

Bateman, Chris (2006a). “Early Playground Worlds”, *Only a Game*, available online: http://onlyagame.typepad.com/only_a_game/2006/06/early_playgroun.html (accessed 24th December 2015).

Bateman, Chris (2006b). *Play with Fire* [PC game], New York: Manifesto Games.

Bateman, Chris (2011). *Imaginary Games*, Winchester and Chicago: Zero Books.

Bateman, Chris (2012). *The Mythology of Evolution*, Winchester and Chicago: Zero Books.

Bateman, Chris (2013a). “Fiction Denial and the Liberation of Games” [Limited Edition Paper], Bolton: University of Bolton.

Bateman, Chris (2013b). “Is Fiction Just a Wrapper for Games?” *ihobo.com*, available online: <http://blog.ihobo.com/2013/10/is-fiction-just-a-wrapper-for-games.html> (accessed 24th December 2015).

Bateman, Chris (2014a). *Chaos Ethics*, Winchester and Chicago: Zero Books.

Bateman, C. (2014b) “Empirical Game Aesthetics”, in Marios C. Angelides, Harry Agius (eds.), *IEEE Handbook of Digital Games*, Hoboken, NJ: Wiley-IEEE Press, pp. 411-443.

Bateman, Chris (2015a). “Five Millennia of Play: A Philosophical History”, *3rd Annual Philosophy at Play conference*, Gloucester.

Bateman, Chris (2015b). “The Gaiety or Meditations on Arcade Player Practices”, *DiGRA 2015 Diversity of Play*, Lüneburg.

Bateman, Chris (2016a). “The Aesthetic Motives of Play” in Kostas Karpouzis and Georgios Yannakakis (eds.), *Emotion in Games: Theory and Praxis*, New York, NY: Springer, pp3-20.

Bateman, Chris (2016b). “The Lineages of Play”, *Journal of Playwork Practice*, vol. 3, no 2, pp95–106.

Blizzard Entertainment (2004). *World of Warcraft* [PC game], Irvine, CA: Blizzard.

Blow, Jonathan (2008). *Braid* [Xbox game], Redmond, WA: Microsoft.

Bogost, Ian (2009). “Persuasive Games: Familiarity, Habituation, and Catchiness”, *Gamasutra*, available online: http://www.gamasutra.com/view/feature/3977/persuasive_games_familiarity_.php (accessed 24th December 2015).

Braybrook, Andrew (1985). *Paradroid* [Commodore 64 game], Manchester: Hewson Consultants.

Bungie (2001). *Halo: Combat Evolved* [Xbox game], Redmond, WA: Microsoft.

Cameron, James (1986). *Aliens* [Film], Los Angeles, CA: 20th Century Fox.

Cook, Dan (2007). “The Chemistry of Game Design”, *Gamasutra*, available online: http://www.gamasutra.com/view/feature/129948/the_chemistry_of_game_design.php (accessed 24th December 2015).

Cook, Dan (2013). Comment to “Is Fiction Just a Wrapper for Games?” *ihobo.com*, available online: <http://blog.ihobo.com/2013/10/is-fiction-just-a-wrapper-for-games.html> (accessed 24th December 2015).

Core Design (1996). *Tomb Raider* [Multiplatform game], London: Eidos.

Digital Illusions (2002). *Battlefield 1942* [PC game], Redwood City, CA: Electronic Arts.

DMA Design (1997). *Grand Theft Auto* [PC game], New York: BMG Interactive.

DreamWorks Interactive (1999). *Medal of Honor* [Multiplatform game], Redwood City, CA: Electronic Arts.

Eskelinen, Maarku (2001). "The Gaming Situation", *Game Studies*, vol 1. no. 1, [online], available at: <http://www.gamestudies.org/0101/eskelinen/> (accessed 25th January 2017).

Foucault, Michel (1972). *The Archaeology of Knowledge*, translated by A.M. Sheridan Smith, New York: Pantheon.

Frasca, Gonzalo (1999). "Ludology Meets Narratology: Similitude and differences between (video)games and narrative", *Ludology.org*, available online: <http://www.ludology.org/articles/ludology.htm> (accessed 24th December 2015).

FTL Games (1997). *Dungeon Master* [Multiplatform game], San Diego, CA: FTL.

Gygax, Gary and Arneson, Dave (1974). *Dungeon & Dragons* [Tabletop role-playing game], Lake Geneva, WI: Tactical Studies Rules.

HAL Laboratory (1999). *Super Smash Bros.* [N64 game], Kyoto: Nintendo.

id Software (1993). *DOOM* [PC game], Mesquite, TX: id Software.

id Software (1996). *Quake* [PC game], New York: GT Interactive.

Infinity Ward (2003). *Call of Duty* [Multiplatform game], Santa Monica, CA: Activision.

Infinity Ward (2007). *Call of Duty 4: Modern Warfare* [Multiplatform game], Santa Monica, CA: Activision.

Irby, Chad and Jackson, Steve (1980). *Car Wars* [Tabletop game], Austin, TX: Steve Jackson Games.

Jarvis, Eugene and DeMar, Larry (1981). *Defender* [Arcade game], Enterprise, NV: Williams.

Juul, Jesper (2005). *Half-Real, Video Games between Real Rules and Fictional Worlds*, Cambridge, MA: MIT Press.

Kant, Immanuel (1781). *Critique of Pure Reason*, translated by Paul Guyer and Allen Wood (1999), Cambridge: Cambridge University Press.

Kirkpatrick, Graeme (2011). *Aesthetic Theory and the Video Game*. Manchester, UK: Manchester University Press.

Lantz, Frank (2015). "More Thoughts on Formalism", *Gamasutra*, available online: http://www.gamasutra.com/blogs/FrankLantz/20150120/234524/More_Thoughts_on_Formalism.php (accessed 24th December 2015).

Lave, Jean and Wenger, Etienne (1991). *Situated learning: Legitimate peripheral participation*, New York, NY: Cambridge University Press.

Nintendo R&D4 (1985). *Super Mario Bros.* [NES game], Kyoto: Nintendo.

Office Create (2006). *Cooking Mama* [Nintendo DS game], Kyoto: Nintendo.

Persson, Markus 'Notch' (2009). *Minecraft* [PC game], Stockholm: Mojang.

Piaget, Jean (1926). *The Child's Conception of the World*. London: Routledge and K. Paul.

Project Soul (2002). *Soulcalibur II* [Multiplatform game], Tokyo: Namco.

Retro Studios (2002). *Metroid Prime* [GameCube game], Kyoto: Nintendo.

Rockstar North (2004). *Grand Theft Auto: San Andreas* [Multiplatform game], New York: Rockstar Games.

Rockstar North (2010). *Red Dead Redemption* [Multiplatform game], New York: Rockstar Games.

Salen, Katie and Zimmerman, Eric (2003). *Rules of Play: Game Design Fundamentals*, Cambridge, MA, MIT Press.

Segal, Charles (1986). *Interpreting Greek tragedy: myth, poetry, text*, Ithaca, NY: Cornell University Press.

Sicart, Miguel (2008). "Defining Game Mechanics". *Game Studies*, vol. 8, no. 2, available online: <http://gamestudies.org/0802/articles/sicart> (accessed 24th December 2015).

Sicart, Miguel (2009). *The Ethics of Computer Games*, Cambridge, MA: MIT Books.

Silicon Knights (2002). *Eternal Darkness: Sanity's Requiem* [Gamecube game], Kyoto: Nintendo.

Sony Online (1999). *EverQuest* [PC game], San Diego, CA: Sony Online Entertainment.

Spielberg, Stephen (1998). *Saving Private Ryan* [Film], Universal City, CA: DreamWorks Pictures.

Spry Fox (2010). *Triple Town* [Mobile Game], Seattle, WA: Spry Fox.

Squad (2011). *Kerbal Space Program* [PC game], Mexico City: Squad.

Square (1997). *Final Fantasy VII* [PlayStation game], Tokyo: Square.

Strategic Simulations Inc. (1995). *Steel Panthers* [PC game], Mountain View, CA: SSI.

Toy, Michael and Wichman, Glen (1980). *Rogue* [Unix game], no publisher.

Turn 10 Studios (2005). *Forza Motorsport* [Xbox game], Redmond, WA: Microsoft.

Walton, Kendall L. (1990). *Mimesis as Make-believe: On the Foundations of the Representational Arts*, Cambridge, MA: Harvard University Press.

Weisman, Jordan; Babcock III, L. Ross; and Lewis, Sam (1984). *BattleTech* [Tabletop game], Chicago, IL: FASA Corporation.

Wittgenstein, Ludwig (1953). *Philosophical Investigations*, translated by G.E.M. Anscombe (1962), New York: Macmillan.

Yablo, Stephen (2002). "Go Figure: A Path through Fictionalism", *Midwest Studies in Philosophy*, vol. 25, pp. 72-102.

2.

“Ruinensehnsucht”

Longing for Decay in Computer Games

Mathias Fuchs

Transactions of the Digital Games Research Association

2017, Vol. 3, No. 2, pp. 37-56

ISSN 2328-9422

<http://todigra.org>

TEXT: Licensed under Creative Commons Attribution (CC BY-NC-ND 2.5) <http://creativecommons.org/licenses/by-nc-nd/2.5/>

IMAGES: All images appearing in this work are property of the respective copyright owners, and are not released into the Creative Commons. The respective owners reserve all rights.

ABSTRACT

There is no technical reason and no quality inherent to the medium of computer games that would require corrosion, dust, and ruins. Pixels do not corrode and 3D geometry is not affected by physical decay. Yet if we look at contemporary computer games we find an abundance of ruined buildings, of mould and of all forms of decay of organic matter and inorganic materials. It would be too easy to explain this fact by an attempt to increase realism, because some of these games clearly feature more decay than reality could ever produce. There must be a longing by designers and players to immerse themselves within an environment of

disintegrating, decaying objects. The author investigates the longing for decay along four threads that are informed by computer games history, art history, psychoanalytic reasoning and the concept of transmedia megatext.

Keywords

ruins, digital dust, creative games, computer games history, psychoanalysis, philosophy of games, pathos formula, transmedia megatext.

Digital Dust

Some of the most interesting of recent computer games celebrate the beauty of ruins and invite us to immerse ourselves in landscapes of ruins from antiquity to the space age. The ruins are set in post-nuclear war environments (*Metro 2033*)¹, sites of archaeological excavations and discovery (*Tomb Raider*)², technological disaster areas (*Fallout*³, *S.T.A.L.K.E.R.*⁴), medieval environments (*Assassin's Creed*)⁵, industrial wreckage (*Unreal Tournament*)⁶, mythological places that are known for the buildings they once contained (*Ruins*)⁷, or even completely fictional places (*Journey*)⁸.

There is a rich body of research in art history about the meaning and form of ruins, e.g. (Ginsberg, 2002; Böhme, 1989; Dubin, 2010; Wu Hung 2012). In game studies however, only a few papers on the topic have been published (Fraser, 2015; Vella, 2010; Martin, 2001). Ruins are mentioned in Hans Joachim Backe's and Espen Aarseth's text on

1. by Deep Silver (2013)

2. by Eidos (1996)

3. by Interplay Entertainment (1997)

4. by GSC Game World (2008)

5. by Ubisoft (2007)

6. by Epic Games (1999)

7. by Cardboard Computer (2011)

8. by thatgamecompany (2012)

zombieism (Backe & Aarseth, 2013: 4) and in Tanya Krzywinska’s *Zombies in Gamespace* that she published in the book with the uncanny title “Autopsies of the living dead in videogames” (Krzywinska, 2008). Both aforementioned texts discuss ruins as some kind of staging for dramatic or ludic content and do not credit ruins as a central object of the game – or even propose that the ruins could at times carry more importance than player characters or rule systems. Emma Fraser’s critical approach draws on Walter Benjamin’s reflections and tries to attribute the critical power of ruins “to unsettle, even to haunt the dream worlds of contemporary capitalism” (Fraser, 2005). Daniel Vella thoroughly points out spatial features of representations of ruins and connotes those with the player experience.

As far as I know, little has been published about the aspect of “longing for decay” and of the mediatic and game-historic aspects of ruins in ludic 3D environments. One might speak of a longing for decay to describe a phenomenon that consists of a strong affective tie to disintegrating objects. Alluding to German romanticism and in particular to a specific style of painting that has been made popular by Caspar David Friedrich, the appropriate term would be “Ruinensehnsucht”. The German word “Sehnsucht” is difficult to translate. “Sehnsucht” is different from “desire” as it is less directed towards gratification, and it is not identical to “longing” as it carries a melancholic connotation that longing need not have. The notion of “Sucht” or addiction is contained within “Sehnsucht”.⁹ We can get used to or even be addicted to this particular longing. In the 19th century touristic visits to ancient ruins turned into obsessive admiration of decayed sites in Rome, Palermo or Athens for some, and nowadays urban explorers develop intensive practices to visit decayed spaces in modern cities and industrial wastelands.

If there was a place and time of perfection, where neither rust nor moss, no decay or disasters, and no demolition or ruin were ever seen,

9. I owe Joseph P. Lawrence thanks for a hint on the etymology of “Sehnsucht” that he made me aware of at the *Apocalypse* conference in Oxford in 2013.

this would have to be a fictional world – and in our time, probably a computer simulation of a perfect world.



There is no technical or conceptual reason that would make designers of such a world implement decay. There would be no reason for metal to rust, for stone to break and crumble, and for wood to moulder away. Yet if we look at contemporary games we will find abundant ruins, cracks in concrete walls, and corrosion of metal. It would be too easy to explain this by stating that decay just looks realistic in virtual environments, because some of these environments clearly feature more decay than reality could ever produce. There must be a longing of the designers and of the players to immerse themselves within an environment of disintegrating, decaying objects, full of dust, fog, rubble and acid rain.

It is obviously not only the locations and the sites in which these computer games are staged, but also the player's viewpoint, atmospheric lighting, dust and a preference for a certain type of landscape, vegetation, textures, and material that constitute an aesthetic framework for "Ruinensehnsucht", the longing for decay. Such a longing, if expressed in an artistic medium like games, art, architecture or poetry can be

described as the aesthetic form of a longing for ruins. Hartmut Böhme, a German philosopher and cultural studies researcher uses this notion when he speculates about the dialectics of our fascination with the decline of cities and the decay of historical buildings. In his publication *Die Ästhetik der Ruinen* (Böhme, 1989) he dates the starting point for an aesthetics of ruins back to the year 1337.¹⁰ That is when Petrarca, walking on Mont Ventoux with a friend, got involved in the conversation about “*tempi passati*”, times gone. Petrarca described the landscape of ruins that he was looking down upon as a “book of memories” and noted that it is by writing about the ruins that he could counter the permanent decay of those disintegrating buildings. The text, or more generally the artwork provides us with hope for “*renewatio*”, the reconstitution of heroic times. Poetry, from this point in time on, would play with ruins as signifiers for *renewatio*, but also use them as a theatre of memories and point towards power, eternity, deity and indestructibility. In the 16th century the arts of painting and architecture discovered ruins for their purposes. Ruin painting (Giorgione, e.g.) and the construction of artificial ruins became a means to demonstrate historical knowledge and humanistic education. The first artificial ruin is said to have been erected in 1530 in the Pesaro palace gardens. Hartmut Böhme points out that building a ruin next to a functional building cannot be interpreted as mere contemplation about transience and eternity, but needs to be seen as a statement of power. The ruin next to the functional palace of a sovereign clearly demonstrates power and presence *ex negativo*. Ruins might signify momentariness, and they can signify the opposite of that: eternity. “This other form to refer ruins to temporal stability consists of building ruins,” says Böhme. “The grottas, artificial ruins or paintings of ruins, that used to be integrated into the dukes’ palaces and into the spectacular garden landscapes, lend themselves to a discourse of power – not of melancholia.” (Böhme, 1989: 297)¹¹

10. Cynthia Finlayson corrected me in erroneously believing Hartmut Böhme that the first pictorial representations of ruins date back to the 16th century. She convincingly pointed out that Böhme and I were wrong. Pictures of ruins actually date back to ancient Rome.

11. Translated by the author. German original in Böhme (1989) “*Die Ästhetik der Ruinen*”.

It is no surprise then that Albert Speer, Hitler's favourite architect and planner discovered and described the "value of ruins"¹² (Speer, 2005) in what he called a theory. Speer suggested that a good building could become even better once it has fallen apart. It would then remind the successors of the builders of the glory the perished buildings once had. Böhme's suspicion that "German imitations of Italian Renaissance palaces are hardly a *memento mori*, but a conscious and illusionistic staging of ruins, that is contrasted by the obvious power of the ruling sovereign" (Böhme, 1989: 302) needs to be seen in the light of more recent ruined buildings. Furthermore, Böhme's idea can also help us to understand ruined buildings that are not made of stone and wood, but rather built in 3D environments, computer simulations and games.

The recent and most technologically advanced construction of artificial ruins happens in the realm of computer games. Film, photography, architecture and literature have, of course, featured ruined buildings, but what we can see now in digital games is far beyond what former media have accomplished. The ruins in games provoke an affective intensity that has been made possible by technological innovation, immersive spatiality and mediatic referentiality.

I suggest exploring four different threads to explain why there are so many ruins in today's computer games. These lines of investigation are informed by

- media history of computer games,
- history of the visual arts,
- psychoanalysis, and
- transmedia megatext.

12. Translated by the author. In the German original text it says, "Ruinenwert Theorie".

History of Decay in Computer Games

In early computer games, the visuals were restricted by technological limitations such as screen resolution, memory space, and processing power of the consoles. As a consequence, the display of visually complex objects such as animals, humans or spaceships required reduced complexity to a large degree. *Spacewar!*'s spaceships were displayed as triangles and *Pac-Man* monsters consisted of 16 by 16 pixels with a colour selected from a 256 bit colour palette. This left little space for textural detail or atmospheric backgrounds, and would make the display of reflections, “imperfections” in geometry, and processes of decay almost impossible.¹³ The resulting aesthetics of coarse pixelation and glossy, naïve squareness was a product of technical constraints rather than a deliberate artistic decision. So, it is quite surprising that, even after the constraints were removed, a look and feel of Lego Worlds persisted, with a few modern games like *The Sims* (Maxis Entertainment, 2000). These games represent a messy world as a clean virtual environment. Idealized objects are rendered noise-free to the screens. The general trend, however, was an increase in visual and aural artefacts that could be named “digital dust”. It took games history some 30 years to proceed from the simplicity of early ‘60s games to the games of fog, rust and dust of the 21st century.

13. My colleague Chris Bateman has a point when he states that there were ruins before high-end graphic cards were introduced. I have to admit, that there are “... numerous examples of ruins from the 8-bit era. For a start, Mike Singleton's Tolkien-inspired *The Lords of Midnight* (Beyond 1984) has ruins dotted around the landscape, and is one of the first videogames to do so. There is also potentially an argument for *Gift from the Gods* (Denton Designs 1984) qualifying: although the catacombs in this game are lacking in ‘digital dust’. I suspect only because of the technical limitations, and there is a definite sense of ruin about them. There's also Paul O'Malley's *Arac* (Addictive 1986), also known as *Spiderbot* in some territories, which has a hi-tech zone within an overgrown outer area that suggests something of the new within the ancient, although it is not necessarily a world that fits into your general case here. But most clearly there is *Sacred Armour of Antirad* (Palace 1986), which is a post-apocalyptic game in which the ruins of the older civilisation lie among verdant locations, in the same manner as *Arac*. Whereas in *Arac*, some interpretation is needed, *Antirad* is unequivocally an example that fits your pattern. The longing for ruins goes back right to the dawn of the videogame industry!” (Chris Bateman in an email dated 13 April 2016) The punctuation and italics has been changed by the author.

By comparing versions of games that had undergone the evolution from a first version to a series of more advanced versions (*Unreal Tournament*, *UT2003*, *UT2004*, *Unreal3* or the like) one often finds an increase in special effects and procedural dust that make the games of the more recent past look “older” and more worn out than the earlier versions. This tendency is also visible in avatar skins, haircuts and dresses. *Tomb Raider* (1996, 1997, etc. until 2012, cont.) is an example of such a transformation. Whereas the early *Lara Croft* looked like a soft-skinned doll in a clean toy shop, in the latest release she comes with a considerable number of bruises, scars, skin impurities and an unkempt “out of bed” hairstyle. T-shirts of avatars that once looked as if they were nicely ironed, nowadays have to be covered with mud, bloodstains and sweat.

Even ludic nature has become more corroded than it once was. Trees have to have moss on the bark, the feet on the ground have to trace dust tracks, and the air needs to be filled with fog and smoke. The technical reason for this transformation lies in the fact that fog is render-intensive and dust or pollution effects require a higher processing power than a clean and perfect world rendering. Only with advanced video cards did it become possible to generate hyper-realistic fog in the distance, to blur the view when diving in muddy water or to create smoke trails and realistic rain. It may sound paradoxical, but in order to create an imperfect world you need to have a perfect computer. A perfect world is easily generated.

My point here is that it is due to technological advances and progress in the performance of graphics cards that nature could take an active role in games, and that ruins enlivened by natural processes of decay could turn into actors of gameplay. “The landscape is not only something seen and read,” observes Paul Martin. “Landscape [...] is therefore an element of the game that is capable of doing work in relation to the game’s story in the same way that we conventionally think of characters doing work. However, while characters work in the representational mode of stories and messages, landscape works primarily through embodiment

and interaction.” (Martin, 2001: 4) Paul Martin seems to see the ability of landscape to work as a feature that is enabled by a particular design approach, like that of Todd Howard, Ken Rolston and Mark Nelson, game designers of *Bethesda Softworks* (2006). I would add that designers like those mentioned draw from a portfolio of industry standards and graphic card innovations that allow them to transform landscape in a way that Paul Martin describes so fittingly: “Landscape, in other words, is not a backdrop but the main attraction. The hero is a necessary means of interpreting the landscape.” (Martin, 2001: 4) Along the same lines one might say that advanced games technology enables ruins to become the main attraction. But beyond that the ruin also becomes the main actor. In many contemporary post-apocalyptic games, the hero is just a necessary means of interpreting ruins, the construction of which is now made possible by recent improvements in computer technology. These improvements have expanded the canvas that game designers work on when it comes to conveying narrative and creating gameplay challenges. If we looked at it this way, we could propose that the history of decay in computer games is the journey from imagined decay to perceived decay. In other words: Whilst decay in earlier games was largely based on the imagination of the player, recent games exhibit fully rendered and exaggerated decay, which both shapes narratives and ludic frameworks.

Visualisations of Ruins

There have been times when the depiction of ruins became common painterly practice. French and Italian Rococo were such periods, German Romanticism definitely was, and the 21st Century seems to have entered a similar phase with computer games like *Fallout*, *S.T.A.L.K.E.R.*, *Half-Life 2* or *Metro 2033* – to just name a few. Ruins in Rococo, Romanticism and Pre-Raphaelite painting could stand side by side with recent visualisations of ruins in computer games in regard to the level of sophistication of lighting, perspective, metaphor and allegory. On one hand, there is this level of metaphor and meaning, but there are also formal aspects: the composition of the work of art, perspective,

position of the viewer, position of the observer relative to the ruin in the image, colours, shadows and light. Caspar David Friedrich’s paintings introduced an observer’s perspective that looks at the object of the painting across the shoulders of a person in the painting. This mode of looking at an object with the viewer’s avatar in the painting has rightly been called a “third-person shooter perspective”.¹⁴ The avatars Friedrich introduces, like the “wanderer” in *Der Wanderer über dem Nebelmeer* (1817) or himself in *Auf dem Segler* (1818-19) pull the observer into the painting and at the same time create a strange distance to the depicted landscape.

There is also – very similar to computer games – a separation, or enforced discontinuity between foreground and background. In most games, the skybox is a means of separating navigable space from a remote background that cannot be entered by the players of the game. The skybox uses a flat texture (or a series of overlapping textures) surrounding the game world while being completely detached from the navigable geometry, which creates a perfect space of illusion. In Friedrich’s paintings it is valleys, mountain ridges or forests that create a perceptual barrier in between perfect nature and the human observing this perfection.



14. cf. David Hancock’s “Romanticism and Computer Games” (PhD dissertation University of Salford, in progress).

The buildings that turned to ruins are always idealised and not at all realistic depictions of buildings that have broken down. They contain certain elements of ruins like columns and arches, but these elements are arbitrarily repeated and intentionally isolated from the less appealing aspects of decay. In *Westfassade der Ruine Eldena mit Backhaus und Scheune* (1806) Caspar David Friedrich depicts his favourite ruin, the ruin of Eldena as an idealised structure of gothic arches. These arches reappear in Friedrich’s paintings of natural monuments, like the Rügen chalk cliffs, where the cliffs are presented to us in an arch-shaped form. Again, computer games pick up this preference for aesthetically idealised forms of ruins and have us enjoy the arches and the columns and pillars as if we were watching 19th century romantic paintings. *Assassin’s Creed* is a romantic computer game by virtue of its formal arrangement of ruins, and also in regard to the context: Knights and swords were the company of romantic painters would have liked to mingle with, not unlike computer game designers and players of such games. The spatial set-up of players, vis-à-vis ruined buildings, suggests an involvement and an attunement to a situation which Steffen P. Walz describes as “aesthetic and sensual experiences triggered by atmospheres. [...]his category also includes gazing at landscapes.” (Walz, 2010: 31) The theory of space in architecture and spatial considerations in game design have to be considered as interacting factors “Toward a Ludic Architecture”. (Walz, 2010)

Psychology of the Longing for Decay

Freud’s notion of the death drive seems to be a key concept in understanding why we long for ruins and why we cannot be satisfied with constructive processes or rock-solid perennial objects – in life and in computer games. “There is so much death in games”, states Emily Flynn-Jones (2015: 50), and continues: “As a player I am constantly playing with the possibility of death.” Flynn-Jones is trying to “illuminate dark patterns in our gameplay”, and refers to Freud’s “Beyond the Pleasure Principle” (1920) in the fourth chapter (Flynn-

Jones, 2015) of the publication “The Dark Side of Game Play.” (Mortenson, Linderoth & Brown eds.) For Sigmund Freud, however, death was not a matter of computer games.

Freud’s introduction of the notion of a death drive (“Todestrieb”) in his 1920’s publication “Jenseits des Lustprinzips” presents the drive as an anthropological constant that turns us from peaceful and constructive to destructive. The proposition that the death drive opposes *eros* was disputed by the psychoanalytical community in Freud’s day. Wilhelm Reich, amongst others, would have preferred to analyse destructive behaviour as led by a corrupted form of life drive, and not by a proposed death drive that could explain fascination with war, death or ruins. The attempt of Reich to prove that Freud was wrong led to serious confrontation in the International Psychoanalytic Association (IPV) and culminated in Reich’s expulsion from the association in 1934. Freud’s concept of the death drive was based on a proposed antagonism between organic growth and development on one hand and static regression on the other. “The death drive”, said Freud, “strives towards a reestablishment of the anorganic state of lifelessness, of stasis and death.” (Freud, 1975: 213) He concluded that neurotic behaviour and repetition compulsion would have to be understood as governed by the death drive. In 1938 Freud published *Das Unbehagen in der Kultur* in which he insisted on holding the death drive responsible for mass destruction and war. Freud’s opponents once more warned against assuming that such a drive would be an integral part of the psyche, yet 20 years later some form of a death drive, then labelled *thanatos* or death instinct, was once more discussed as a possibility. Melanie Klein as well as Jacques Lacan reinstated the notion of a death drive. “Those who try to exclude the death drive from their theories misunderstand psychoanalysis,” states the philosopher and psychotherapist. (Lacan, 1991: 185) He corrects Freud however in positioning death drives as symbolic. “It is not a question of biology,” he says and distinguishes the drive clearly from biologically based instincts that would – according to Freud – aim to direct living, organic structures towards an inanimate state. Slavoj Žižek follows Lacan in proposing that the death drive

does not refer to literal death, but to death within the symbolic order instead. “We reject language, conceptualization and categorization, but the subject still persists.” (Žižek, 2006: 61) He calls an existence under such conditions “living death” and those who continue living after refuting the symbolic order, “the undead”. The repetitiveness of the process of killing elements of the symbolic order was actually something that Freud already pointed out.

Freud observed how repetition is a method of dealing with traumatic experiences, and his description of the “Fort-Da” game his grandson used to play, became crucial for the psychological understanding of the dialectics of destruction and creation. “I eventually realized that it was a game and that the only use he made of any of his toys was to play ‘gone’ with them. One day I made an observation which confirmed my view. The child had a wooden reel with a piece of string tied around it. It never occurred to him to pull it along the floor behind him, for instance, and play at its being a carriage. What he did was to hold the reel by the string and very skillfully throw it over the edge of his curtained cot, so that it disappeared ...” (Freud, 1975: 225)¹⁵. We know from the practice of playing computer games that repetition is essential to gaming. Some argue that players identify avatars with real people and that they imitate life, both physically and psychologically, with computer games. Computer games could then be a way of dealing with trauma. It could well be that one of the psychological aspects of playing with ruins is what Sigmund Freud’s theory describes as the trauma of repeatedly reliving creation and destruction via play to get relief from this cycle.

Transmedia Megatext

As in paintings, ruins in computer games often originate from historical buildings or from mediated forms of ruins. Game designers might have been inspired by ruins from movies, paintings, drawings or stories that influenced the design of the in-game ruins. In some cases, there might

15. transl. by the author.

be a direct reference to a non-game object, like a historic ruin. In other cases, the reference aims at a wider concept of ruins and decay. The ruin in the videogame would then pick up a “pathos formula” (Warburg, 2000) or it would refer to a “megatext” (Segal, 1986) and become an “element of the corpus [of a megatext]”. (Bateman, 2011: 156) The megatext would, in this case, be constituted by an ensemble of paintings of ruins, stories about ruins, and music in attunement with decay and ruins. Reaching much further than what Charles Segal described in his account of the themes and tales of Greek myths, the “Longing for Decay” megatext crosses the borders of various media and refers to a huge corpus of ruins in film, literature, poetry, music and games. To borrow a phrase that Henry Jenkins used for transmedia objects, also ruins have formerly been “enshrined in stain glass windows or tapestries, told through printed words or sung by bards and poets.” (Jenkins, 2003: 3) Today, one might add, the ruins have been ported to computer games as well. This process is somewhat related to what Henry Jenkins calls transmedia storytelling. “Let’s face it: we have entered an era of media convergence that makes the flow of content across multiple media channels almost inevitable. The move toward digital effects in film and the improved quality of video game graphics means that it is becoming much more realistic to lower production costs by sharing assets across media.” It might however not only be for financial reasons, that game designers “steal” from other media; it seems to be a tradition in storytelling that is older than digital media. “For most of human history, it would be taken for granted that a great story would take many different forms, enshrined in stain glass windows or tapestries, told through printed words or sung by bards and poets, or enacted by traveling performers.” (Jenkins, 2003: 3) No wonder that a story that was strong enough to inspire Andrej Tarkovski in 1978 to build his film *Stalker*¹⁶ upon it, crossed media once more for a mediatic reincarnation as the *S.T.A.L.K.E.R.* computer game. The game’s ruins and its *tristesse* landscape are reminiscent of those in the film (as the latter are reminiscent of the novels’) but they are not identical replicas.

16. Andrej Tarkovski, *Stalker*, Movie, 1978.

In using transmedia storytelling for the construction of ruins we are offered the possibility to refer to different systems of reference. The ruins in the game *S.T.A.L.K.E.R.* might remind us of Tarkovski’s film, they might also evoke memories and fear of nuclear disaster or they might make us think of game-related features such as sunbeam projection, edge detection algorithms and the like. I do not follow Henry Jenkins’ suggestion that an instance of a transmedia storytelling chain can be enjoyed without knowing about the other instances. Different to Jenkins, I think that the full experience of transmedia storytelling lies in the multiplicity of connotations and that any work of art can be best enjoyed by accessing the full range of references. In regard to computer game ruins, I suggest that one will have the best experience of an in-game ruin by contextualizing it to the history of artificial ruins in architecture, to key work from the history of painting, and to the multitude of ruins in literature, film, television, sculpture, politics, etc.



Conclusion

A ruin is much more than just a certain type of building that has been put together from stones and bricks. Ruins have cultural connotations, architectonic references, hopes and anxiety of a psychological nature, mediatic representations, myths and mysteries. Ruins in computer games carry all of these points of reference in the backpack. They often originate from memories and depictions of historical buildings or from mediated forms of architectonic decay. It is for the very reason of the

multi-faceted nature of ruins that a multimodal analysis of ruins and decay in computer games has been undertaken in this article.

- In regard to the history of computer games an analysis of technologies available for displaying decay shows that a visually convincing representation of ruins is dependent upon rendering qualities that graphics cards could only achieve from the 1990's onwards.
- The history of German romanticism, as a particular moment in the history of the visual arts, has been analysed in regard to the iconographic similarities of paintings by artists such as Carl David Friedrich and dystopian or nostalgic computer game environments that we encounter in *Half-Life 2*, *S.T.A.L.K.E.R.*, *Fallout*, *Assassin's Creed* etc.
- Psychoanalytic theory offers the concept of the "death drive" to account for a fascination with death, destruction, decay and the beauty of ruins. The death drive is, however, a frequently disputed and controversial model.
- An attempt to name the process of appropriation, creative deconstruction and cross-media transfer of ruins from one medium to another leads to the problem of properly describing this process. The notion of "transmedia storytelling" was introduced by Henry Jenkins (2003; 2008) with the idea of transmedia storytelling being able to open up one fictional world for multiple media within the same franchise. The multireferential nature of ruins in games is often not limited to one single franchise. Jenkins' notion of transmedia storytelling would have to be interpreted broadly to still make sense in this context. "Intertextuality" would be another label that describes the aspect of sharing elements amongst a number of texts when analysing it with the toolset of comparative literature studies. This notion, however, falls short in regard to the element of pathos that is at the core of transmedia ruin representations. Aby Warburg's "pathos formula" (Warburg, 2000)

might help here, but once more does not capture all aspects of what the author is trying to describe. The working suggestion that has been made here is to call the beast “transmedia megatext” and position the process with one foot in Segal’s territory of the “megatext” (Segal, 1986; Bateman, 2011) and with the other foot in Jenkins’ “transmedia storytelling”. This is obviously a fragile solution that needs to be worked on.

BIBLIOGRAPHY

Backe, H.-J. & Aarseth, E. (2013) “Ludic Zombies: An Examination of Zombieism in Games”, in: Proceedings of DiGRA 2013: DeFragging Game Studies.

Bateman, C. (2011) *Imaginary Games*. Winchester: zero books.

Böhme, H. (1989) “Die Ästhetik der Ruinen”, in: *Der Schein des Schönen*, eds. Dietmar Kamper & Christoph Wulf. Göttingen, pp. 287-304.

Dubin, N. L. (2010) *Futures & Ruins: Eighteenth-Century Paris and the Art of Hubert Robert*. Los Angeles: Getty Research Institute.

Flynn-Jones, E. (2015) “Don’t Forget to Die: A Software Update is Available for the Death Drive”, in: Mortensen, T., Linderoth, J. and Brown, A. ML. (eds.). *The Dark Side of Game Play: Controversial Issues in Playful Environments*. New York and London: Routledge.

Fraser, E. (2015) “Awakening in ruins: the virtual spectacle of the end of the city in video games”, at: *Marx at the Movies*, UCLAN, July 1-2, 2015.

Freud, S. (1975) “Jenseits des Lustprinzips”, in: *Sigmund Freud Studienausgabe*, eds. Alexander Mitscherlich et al., Frankfurt a.M.: Fischer, Vol. 3.

Ginsberg, R. (2004) *The Aesthetics of Ruins*. Amsterdam, New York: Rodopi.

Jenkins, H. (2003) *Transmedia Storytelling. Moving characters from books to films to video games can make them stronger and more compelling*. (MIT Technology review, 15 Jan 2003) <http://www.technologyreview.com/news/401760/transmedia-storytelling/3/>

Jenkins, H. (2008) *Convergence Culture: Where Old and New Media Collide*. New York: New York University Press.

Krzywinska, T. "Zombies in gamespace: form, context, and meaning in zombie-based videogames", in: McIntosh, S. and Leverette, M. (eds.). *Zombie culture. Autopsies of the living dead*. Lanham, Md: Scarecrow Press, 2008, pp. 153–168.

Martin, P. (2001) "The Pastoral and the Sublime in Elder Scrolls IV: Oblivion", in: *Game Studies, International Journal of Computer Games Research*, volume 11 issue 3. <http://gamestudies.org/1103/articles/martin>

Lacan, J. (1991) *Subversion des Sujekts und Dialektik des Begehrens im Freudschen Unbewussten* (Berlin/ Weinheim: 1991, containing the essay from 1960), pp. 165-204.

Segal, C. (1986) *Interpreting Greek tragedy: myth, poetry, text*. Ithaca, NY: Cornell University Press.

Speer, A. (2005) *Erinnerungen*. Berlin: Ullstein Taschenbuchverlag.

Vella, D. (2010) "Virtually in Ruins: The Imagery and Spaces of Ruin in Digital Games". Masters Dissertation, University of Malta.

Walz, S. P. (2010) *Toward a Ludic Architecture. The Space of Play and Games*. Pittsburgh: ETC Press.

Warburg, A. (2000) *Der Bilderatlas Mnemosyne*, eds. Warnke, M. and Brink, C., Berlin: Akademie Verlag.

Wu Hung (2012) *A Story of Ruins. Presence and Absence in Chinese Art and Visual Culture*. London: Reaktion Books.

Žižek, S. (2006) *Parallaxe*. Frankfurt/M.: Suhrkamp.

LudoGRAPHY

Addictive, Paul O'Malley (1986) *Arac*

Bethesda Softworks (2008) *Fallout 3*

Bethesda Softworks, Todd Howard, Ken Rolston & Mark Nelson (2006) *The Elder Scrolls IV: Oblivion*

Beyond (1984) *Lords of Midnight*

Cardboard Computer, Jake Elliott (2011) *Ruins*

Deep Silver (2013) *Metro 2033*

Denton Designs (1984) *Gods*

Eidos Interactive, Toby Gard (1996) *Tomb Raider*

Epic Games & Digital Extremes (1999) *Unreal Tournament*

GSC Game World (2007) *S.T.A.L.K.E.R.*

Maxis Entertainment (2000) *The Sims*

Namco (1980) *Pac-Man*

Palace (1986) *Sacred Armour of Antirad*

Steve Russell (1962) *Spacewar!*

56 ToDiGRA

Ubisoft (2014) *Assassin's Creed*

Valve Corporation (2004) *Half-Life 2*

3.

Creative Communities

Shaping Process through Performance and Play

Lynn Parker & Dayna Galloway

Transactions of the Digital Games Research Association

2017, Vol. 3, No. 2, pp. 57-87

ISSN 2328-9422

<http://todigra.org>

TEXT: Licensed under Creative Commons Attribution (CC BY-NC-ND 2.5) <http://creativecommons.org/licenses/by-nc-nd/2.5/>

IMAGES: All images appearing in this work are property of the respective copyright owners, and are not released into the Creative Commons. The respective owners reserve all rights.

ABSTRACT

This paper studies the use of play as a method to unlock creativity and innovation within a community of practice (a group of individuals who share a common interest and who see value in interaction to enhance their understanding). An analysis of communities of practice and the value of play informs evaluation of two case studies exploring the development of communities of practice, one within the discipline of videogames and one which bridges performing arts and videogames. The case studies provide qualitative data from which the potential of play, as a method to inspire creativity and support the development of a potential

community of practice, is recognised. Establishing trust, disruption of process through play and reflection are key steps proposed in a ‘context provider’s framework’ for individuals or organisations to utilise in the design of activities to support creative process and innovation within a potential community of practice.

Keywords

Videogames, communities of practice, collaboration, play, performance, design process.

INTRODUCTION

Videogames and the performing arts are intrinsically linked by the notion of play. Flanagan (2009) identifies the performative nature of games, whereby a “negotiation of action” is required for play. Conversely, play is identifiable in the constructs of performance, where imagination, improvisation and physical expression make up a significant part of an actor, or indeed player’s repertoire. The medium of videogames has selectively drawn from the cultural practices of film, music, dance and theatre, with clear parallels existing between the construction of game environments and set design or interactive art installations. In each instance a context for an experience is established, with forethought into how the audience can perceive, navigate and infer meaning from both the physical space and the action that is staged within it. Against this context, there are important questions about how best to share methods and experience across different communities of creative practice, and how such collaborative approaches might purposefully support the creation of innovative and creative works across a range of artistic disciplines.

The context of this research is characterised by the emergence of digital gaming as a cultural form that has grown from technological roots into the dominant entertainment form of the 21st century. As this medium

continues to develop one can observe an increasing diversification and segmentation of audience and players as it seeks to find new modes to engage more sophisticated audiences and create meaningful experiences (Crecente, 2014, Jenkins, 2005). Parallel developments have seen the adoption of game-like practices in site-specific theatre and are concurrent with the growth in popularity of location-based gaming (Dixon, 2007, Kwastek, 2013, Wood, 2011).

Collaboration across disciplines is central to the creation of such digitally mediated experiences, and issues with working across discipline boundaries have been the focus of much academic enquiry within the creative industries (O'Grady, 2011; Shyba, 2007). Economic growth and policy formation have also been a focus of studies into the creative industries and the recognition and support of creative clusters (Ball, 2014; Chapain et al., 2010; Creative Scotland, 2014). The formation and development of a collaboration itself has, however, been less of a focus of academic research. This paper seeks to explore the process of developing creative communities, underpinned by the concepts of communities of practice, and proposes that play can be utilised as a method to foster and evolve creativity and innovation within communities of practice and across discipline-related boundaries. Within the context of this paper, a community of practice is defined as a group that is formed due to shared interest, but which develops into a culture of creativity, with a shared language, and shared basic assumptions that lead to the creation of knowledge and meaning (Wenger, 1998).

To explore the evolution of creative communities, firstly a foundation for understanding culture and communities of practice is formed, and the value of play is explored in relation to creative potential. Existing initiatives within creative communities such as the creative hub are examined to understand the use of play to trigger creative potential through disruption of conventions. This underpins case study analysis of two examples of the development of communities of practice; one within the field of videogames, and one that bridges performing arts and videogames. The case study experiences provide qualitative data from

which play, as a method for developing a community of practice and unlocking creativity, is examined. The contribution of this paper is the proposition of a theoretical framework for use in the conception and design of events which aim to harness potential within communities of practice through enhancement (and reinvigoration) of creative process to enable innovation in the creation of digitally-mediated art and the emergence of novel outcomes.

CULTURE AND COMMUNITIES OF PRACTICE

Salen and Zimmerman (2004) present a common understanding of culture as the collective ideals, traditions and knowledge possessed by a group or society. Through examination of multiple definitions of culture, they identify three key elements – “what people think, what they do, and the material products they produce.” (p.508) Schein (2010) proposes that a group’s culture can be explored at three levels and that the core assumptions that exist across a group play a significant role in the formation and adoption of specific beliefs and values, which in turn influence observable factors such as behaviour, structures and processes. Schein further asserts that a group can form dependencies on these underlying assumptions to maintain a solid grounding and a collective understanding of purpose. Challenging these assumptions and propositioning for change can provoke negative or defensive reactions, anxiety, and disengagement, all of which are counter-productive to the development of a creative community.

The assumptions that are prevalent within a culture can present limitations on conceptualisation and production process whereby initially successful ideals and methods of working become accepted as normal or best practice, and remain unchallenged. Such an occurrence can lead to the formation of collectively perceived constraints that diminish a team’s ability to identify and explore alternative or innovative solutions. A process proposed by Norman (1998) identifies and embraces constraints, and pairs them with affordances to provide support for using unfamiliar objects or being in unfamiliar situations, whereby

“affordances suggest the range of possibilities, constraints limit the number of alternatives” (p82). Norman classifies constraints into four distinct classes:

- Physical – limitations defined by space, size, and shape
- Semantic – limitations defined by meaning and purpose
- Cultural – limitations defined by acceptable behaviour and societal conventions
- Logical – limitations defined by natural connections and the logic of relationships.

These classifications of constraints have the potential to be broadly applied as a tool to analyse and deconstruct the development processes of creative teams and communities. For example, a game designer is confronted by all four of these classes when designing a game around a particular controller or input device. The process undertaken and the solutions established by the designer are shaped by the physical construction and size of the controller, its purpose as a handheld device, the culturally acceptable function of each trigger, and the logical and instinctive mappings of the directional buttons. The designer is operating within the context of a domain of knowledge, a concept that Csikszentmihalyi (1996) suggests is constituted of a particular set of methods, systems, rules and symbolic representation. When the rules of a domain are understood, a transformative and empowering experience can emerge that “expands the limitations of individuality and enlarges our sensitivity and ability to relate to the world.” (p. 37) The process of learning the skills and procedures of an additional domain can be a challenging activity requiring practice and commitment, and can be positively and negatively influenced by factors such as interventions from external bodies or the structure and accessibility of the knowledge.

The concept of a domain has also been adopted to describe the three core characteristics of a community of practice. According to Wenger et al. (2002) the domain establishes the identity of a community through

knowledge, purpose, and meaning; that community exists as the social connections and relationships that supportively facilitate learning; and practice is the activities and items that the community undertakes, shares, and creates.

Communities of practice can exist in three states: potential, active and latent (Wenger, 1998). Potential communities are “possible communities among people who are related somehow, and who would gain from sharing and developing a practice together.” (p. 228) Active communities are at work, effectively negotiating participation and forming their own domain-specific history, whilst latent communities are those which no longer exist but inform and feed into the practice, language, knowledge and history of each of its former members. In understanding the make-up of a community of practice it is also important to note that they “are about content – about learning as a living experience of negotiating meaning – not about form.” (Wenger, 1998, p.228)

It is not possible to design a community of practice or to use these concepts as a device to bring individuals together. Instead the community must already exist in one of the three possible states and can only be “recognised, supported, encouraged and nurtured” by external forces (Wenger, 1998, p. 228). Pearce (2011) adopts the term “communities of play” to intentionally challenge the implied meaning that has been established with communities of practice. Pearce asserts that play can be described as a form of practice but, with regard to the formation of a community of practice and the potential for its activities to innovate, play and its complex relation to creativity deserves further definition and interpretation.

THE VALUE OF PLAY AND CREATIVITY

Creativity can be defined in relation to the relationship between the creative act and its recognition, such as the creation of “new or original ideas, insights, restructuring, inventions or artistic objects which are

accepted by experts as being of scientific, aesthetic, social or technological value.” (Vernon, 1989, p 94.) In terms of the ‘value’ of creativity, it can be beneficial to consider the relationship between creativity and innovation, as these terms are often interchangeable yet can have two very different meanings. Bateson (2013, p.3) claims that “creativity is displayed when an individual develops a novel form of behavior or novel idea, regardless of its practical uptake and subsequent applications. Innovation means implementing a novel form of behavior or an idea in order to obtain a practical benefit which is then adopted by others.” Creativity can lead to innovation, but creativity and innovation can also exist separate to one another.

Creativity and play, like creativity and innovation, have close ties to one another. Play for example, has been proven to have a positive effect on the creativity of children (Howard-Jones, Taylor and Sutton, 2002). Kline, Dyer-Witthford & De Peuter (2003) identify the positive contribution that play can provide in the contexts of learning and formal education, recognising that “different forms of play permit varying degrees of creativity and experimentation, as well as some questioning of social roles.” (p. 244) Russ (2015, P57) claims that play can be seen as a “window on the beginnings of the creative process.” This close link between play and creativity can be attributed to the ability of play to aid the development of “cognitive, affective and personality processes involved in creativity. Cognitive processes such as divergent thinking, and affective processes such as affect-laden fantasy that occur in play, are expressed in play and develop through play experiences.” (Russ, 2015, P58)

Play has been recognized to defy definition (Sicart, 2014), however, the work of Caillois (1961) provides an exhaustive and robust classification of the different forms of play, categorising activities across four key concepts: *agôn* as competition and challenge, *alea* as chance, *mimicry* as role-playing and simulation, and *ilinx* as physical sensation and disorientation. These categorisations are further distinguished through

Caillois' definition and application of *paida* and *ludus*, or unstructured and structured play.

Through the deconstruction of a century of play theories, Sutton-Smith (2009) contends that play is a varied and ambiguous concept that has been appropriated by different academic disciplines and analysed with a narrow focus or bias, that struggles to accurately represent the intangible qualities of play. Much of the work undertaken by theorists and sociologists exploring the concept of play is founded upon the concepts and theories proposed by Huizinga (1949) who states that play predates culture and is an activity that was not created by man. Huizinga argues that there is a close connection and purity of play within the arts of music, poetry, and dance, which is partly driven by the fact that they are usually bound to performance as opposed to being bound to objects, labour, and matter, as can be recognised in the "plastic arts" of architecture, sculpture, painting and ceramics. Huizinga stresses the importance of the relationship between play and the creation of objects "if therefore the play-element is to all appearances lacking in the execution of a work of plastic art, in the contemplation and enjoyment of it there is no scope for it whatever." (p. 166)

Across other fields, play has been defined and interpreted as a wasteful or unproductive activity. McClelland (2007) explores the relationship of play and sport in a global context, arguing that play is a ludic activity that is wasteful of time, and that work is a serious activity that is productive in terms of time. This view, although clearly open to dispute, can be recognised as the type of assertion that can be misinterpreted, further compounding the issue that reduces society's ability to objectively view play as a productive and essential part of the creative process. Play and the state of being playful are crucial elements in the creation of games, which Fullerton (2014) expresses "is a challenging task, one that requires a playful approach but a systemic solution." (p. 2) This indicates that there are moments within the design and development process that are more suited to either exploring playful methods or using play as a tool to drive production or enable creativity. Landry and Bianchini

(1995) discuss creativity as a concept that has often been defined as being a feature of personality or a characteristic that is developed in an individual as part of their collective learning or lived experience. However, they claim that “genuine creativity involves thinking a problem afresh and from first principles; experimentation; originality, the capacity to rewrite rules; to be unconventional; to discover common threads amid the seemingly disparate; to look at situations laterally and with flexibility. These ways of thinking encourage innovation and generate new possibilities...emphasising the new, progress and continual change.” (p. 18) The qualities and values proposed in this statement can be oriented with modernism which challenged traditional ideals and embraced experimentation and exploration of process. Kester (2004) discusses such creative acts or interventions as being a key legacy of modernism whereby the conditions and situations of objects are disregarded with instead, a focus on the methods in which “aesthetic experience can challenge conventional perceptions...and systems of knowledge.” (p. 3)

SPACES TO PLAY: CREATIVE HUBS, COLLECTIVES AND LANDSCAPE OF PRACTICE

Crogan (2014) highlights how creative economy initiatives often fail to address or indeed include creativity as a core element, instead promoting models whereby the true emphasis rests on economic, legal, and infrastructural conditions that downplay the potential generation of cultural value. In response to such strategic oversights, Crogan identifies the potential role of creative hubs as a vehicle to facilitate creativity and play in the establishment and development of communities, and to drive innovation within the creative industries. Like communities of practice, creative hubs develop where there is a recognised shared interest or potential, and thus the landscape is fragmented internationally. The creative hub exists in many forms, from Government led initiatives such as the National Film Board of Canada (ONF-NFB, 2016), to large scale commercial initiatives such as MediaCity in the UK (Ball 2014),

private and academically supported incubators for entrepreneurship such as Chicago's Entrepreneurial Hub for Digital Start Ups 1871 (1871-2016) through to independent arts collectives and collaborative workspaces including Watershed in the UK (Watershed, 2015), Bento Miso in Canada (Gamma Space Collaborative Studio, 2016) and Play, Collaborative Arts Venue in Los Angeles, USA (Play Collaborative Arts, 2016). Arts collectives and collaborative workspace, like creative hubs, are self-organised creative communities. However, these are usually driven by artistic, social or political intent with less economic motivation and thus can aim to be more experimental and disrupt "existing aesthetic formulas" through their practice (Cotter, 2016).

Creative hubs, much like communities of practice, require a pool of talent to support creativity and embed creative practice for future generations (Ball, 2014). Creative Industries tend to grow in clusters across the UK, and the development of areas with complementary skills (commercial, creative and academic) can develop strong network for creative and economic growth (Chapain et al., 2010). Universities are recognised as a source of emerging talent to fuel and support creative industries, and creative hubs often reference the cluster of commercial, academic, and creative skills as the core to their success (Ball, 2014, Wright, 2015). However, it is important that the role of universities can be recognised as extending beyond the development of talent and towards innovation, as the knowledge within research and academic staff can provide a disruptive element that questions practice and diversifies the collective environment for undertaking challenging, creative work. Creative hubs and universities can act as "context providers" for communities of practice (Kester, 2004). The context provider focuses on process and the creation of spaces within which conversation and participation can lead to the generation of innovation and creativity. In relation to this paper, the context provider could be seen as a facilitator who designs spaces and interventions within which a community of practice can flourish.

Communities of practice can harness the potential within a creative hub to form an ecosystem that is held together by a collective sense of value, trust and the possession of abilities to resolve conflict. Process is central to the creation of such an ecosystem and must develop intuitively from inside the community itself (Wenger, 1998). Communities of practice often exist without such facilitation or support. However, it could be argued that within existing communities of practice – for example, small-scale videogame development – the ecosystem is polluted by an oversaturation of developers reproducing existing styles, structures, and mechanics of previously successful genres. Similarly the tools of game development compound this and can be identified as promoting a bias and dictating a specific way of working, conceptualising, and distributing games. Game engines, the software many developers use to build their games, have a distinct look and feel which can also result in an unintentional, generic look and feel across a spectrum of small, independent productions.

Such outcomes could be viewed as the stagnation of a community of practice. Support by a facilitator could help to disrupt process and inspire new processes within a community. For example, the application of constraints, such as proposed by Norman (1998) could be used to design activities to challenge a community's existing processes. Stokes (2005, p.7) believes constraints upon creativity are “barriers that lead to breakthroughs” and can promote novel responses within constrained creativity. Laurel (2014, p.130) supports this view: “Limitations...paradoxically increase one's imaginative power by reducing the number of open possibilities.” A context provider could support innovation through playful application of constraints to trigger innovation. However, challenging existing meaning within a community can be a volatile process, and context providers must recognise that “learning cannot be designed. Ultimately, it belongs to the realm of experience and practice. It follows the negotiation of meaning; it moves on its own terms.” (Wenger, 1998).

Disruption could also occur by traversing the landscape of practice to collaborate across disciplinary boundaries (Hutchinson et al., 2015). The collaboration of individuals from different disciplinary backgrounds can lead to innovation and creativity within and across disciplines. This process can present issues, as each individual draws from the history of their field of practice which “creates a boundary with those who do not share this history.” (Wenger-Trayner, 2015) Therefore, terminology, interpretation, and perspectives are coloured by the background and experience of the individual. There is potential for cross boundary playful experimentation to address issues of varying histories and perhaps to progress into the development of new shared assumptions upon which innovation could be based. However, the communities coming together at a boundary upon the landscape of practice must recognise the value in the perspectives of the other disciplines and that the knowledge present within each community may or may not be compatible.

METHODS

In order to examine the feasibility of play as a method for the development of a community of practice and for fostering innovation within creative practice, two case studies will be presented. Each case study will examine the potential community and will evaluate the use of play as a method to aid the development of shared language, and more specifically to explore the use of designed constraints within structured play as a motivator of creativity and innovation. Each case study took the form of a workshop series and uses qualitative data gathered through open observation of participants within the workshops. The first, Development Cultures, was a six-month workshop series that brought together practitioners, academics and students within the discipline of videogames. The second case study, Performance and Play was a weeklong intensive workshop that brought together practitioners and academics from the performing arts and videogames to explore the application of practice and process across disciplinary boundaries.

CASE STUDY ONE: DEVELOPMENT CULTURES 2014

Development cultures was a six-month collaborative project which brought together industry practitioners and academics from the field of videogames to share practice, develop relationships, and stimulate discussion around the process, purpose, and potential of experimental game design. In the design of events (Figure 1), the context providers sought to build trust, challenge assumptions, explore routes for innovation and collaboration through definition of shared intent, and promote experimentation through playful interaction. The initial workshop in April 2014 was made up of twenty-three developers and academics. Over the course of the project, the participant group expanded to forty-six for the final workshop in July 2014.

Two practical creation events (or jams) were preceded by reflective seminars where participants shared their personal experiences of game design and development. Jams were identified as ideal experimental vehicles for this project because game jams are known for their ability to foster creativity (Guevara-Villalobos, 2011), develop new skills and relationships (Reng et al., 2013), and have potential to disrupt existing practice (Locke et al., 2015).

Within the reflective seminars, the group was able to begin the identification of themes across individual aspirations because all participants drew from an existing understanding of the domain. These seminars aimed to build a collective understanding of creative intent to aid the formation of a community of practice. Throughout both seminars, participants evaluated their own and others' processes and questioned conventions. Such exploration and re-definition of the collective understanding aided connections within the community and eased the introduction of new members in the later stages of the project. The impact on practice was most evident in the Analogue to Digital and Jump Jam events.

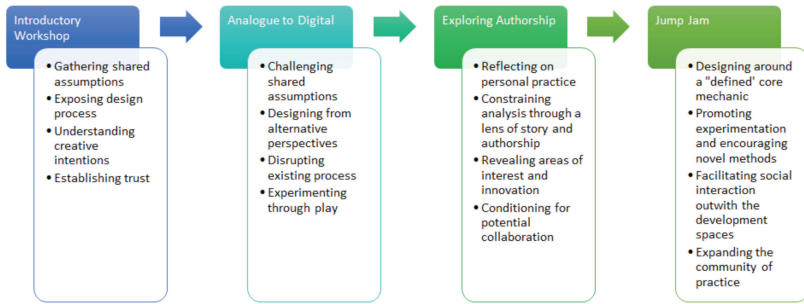


Figure 1: This figure details the goals of playful interaction within each event that aimed at each stage to support, develop and challenge innovation and creativity in a developing community of practice.



Figure 2: Photographs taken during the event of a selection of the experimental controllers and games.

Analogue to Digital: Designing from a New Perspective

The Analogue to Digital workshop aimed to disrupt thinking about interaction with a game to encourage experimentation and creativity. The event challenged participants to explore novel methods for user interaction, utilising found objects that could be re-constructed into custom input devices for games (Figure 2). Teams were tasked with devising and developing a game prototype (along with a bespoke custom controller) and were provided with analogue arcade components such as buttons, micro-switches, joysticks and wires.

Self-organisation of teams allowed for like-minded participants to group together to create work. In some cases, teams were formed by a company with no external input, which ensured ownership remained within the

company whereas other teams were formed across companies and academia enabling knowledge exchange.

The five-hour workshop led to the compression of typical development, design and planning phases and thus once an idea was formed, the designs were iterated upon only as challenges arose. Short time frames are a typical attribute of the game jam (Goddard et al., 2015) with many jams lasting for only 12, 24 or 48 hours. In this case, the time frame was very heavily compressed, which led to further disruption of conceptual and developmental processes. The intimate and unfamiliar workspace fostered an attitude of open collaboration within and across teams. The event focused on design from the player's perspective rather than for existing controllers challenging logical conventions of game development. This altered participant focus with a third of the participants claiming that they were required to foster the co-creation of new processes for design and implementation. The innovative potential of input devices and how they can shape player experience (for better or worse) was a clear outcome of the event and many of the participants expressed a wish to continue this kind of development beyond the workshop.

Experimental Game Jam: The Jump Jam

The Development Cultures project closed with a two-day twelve-hour game jam where industry professionals, academics and students formed teams to create experimental games around the theme of 'the jump'. The theme of the jam was promoted prior to participant arrival. Typically game jams do not reveal their theme prior to arrival of participants, and one individual commented that the disruption of this tradition "allowed us to collaborate and share ideas in advance, building an atmosphere in groups and on social media before the jam began." This event was designed to foster experimentation and facilitate community development through openness and play, thus, social events were scheduled throughout in the form of an introductory meet and greet, a social mixing event on the first evening and an awards ceremony

at the end. The guest list was curated to ensure a proportionate mix of independent developers, students and academics that expanded participation beyond the existing community of practice of the project, inviting fresh perspectives and diversity into the community. The expansion of the community was successful in terms of sharing experience and networking, however, most teams were formed by individuals with existing relationships, and only one team was formed by individuals with no previous experience of working together. There was limited knowledge transfer in teams that had previously worked together, as working practices were a known factor, however, known relationships within a group can help the team to achieve ‘group flow’ which is central “to foster improvised innovation.” (Sawyer, 2008)

The designed inclusion of social activity into the event may have further facilitated sharing of experience and development of relationships. Across teams, community development also occurred informally during breaks, in social events or via on-line resources such as Facebook or Twitter. The use of social media was promoted, (using #AGLjam) for sharing ideas and group problem solving. Participants posted positive comments relating to the experience, development of relationships and range of creativity in prototypes (Hunt 2014). Many final prototypes have been posted online and Storify articles were created to document individual and jam-wide activity (Abertay GameLab, 2014, Hidden Armada, 2014). The breadth of engagement with social media indicates that it serves an important role in sharing experience with the game development community beyond those directly involved in the event itself.

The game jam produced twelve game prototypes, many of which utilised technology, space, and interaction in novel ways (Figure 3). The playful structure of the game jam also influenced the future commercial activities of some of the participants. New working partnerships were formed, and the potential of new intellectual property was recognised. This is evident by the demonstration of one prototype at a major UK games consumer event (Eurogamer, 2014) and the development of

another into a full-scale game for commercial release on Xbox One and Steam (Jump Stars, 2016).

CASE STUDY TWO: PERFORMANCE AND PLAY 2015

Performance and Play was a weeklong intensive workshop hosted by the Dundee Repertory Theatre in February 2015, which brought together thirty-two creatives from performing arts and game development to explore the connections between performance and play. Figure 4 goes here

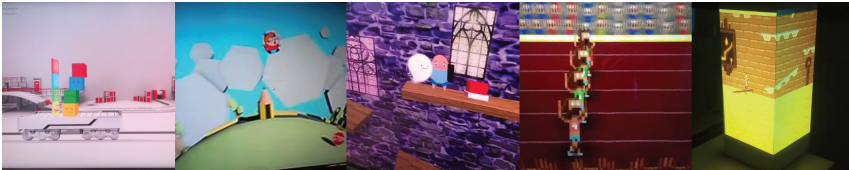


Figure 3: Screenshots from games produced at the jam from left to right: “The Boy who Couldn’t”, a Leap Motion game where players have to bounce the character to avoid obstacles; “Boo”, a scaring game which uses the player’s voice as an input; “Accelerunner”, a four player running simulator; “Phoenix Down”, a three player tower climbing game on a real tower.

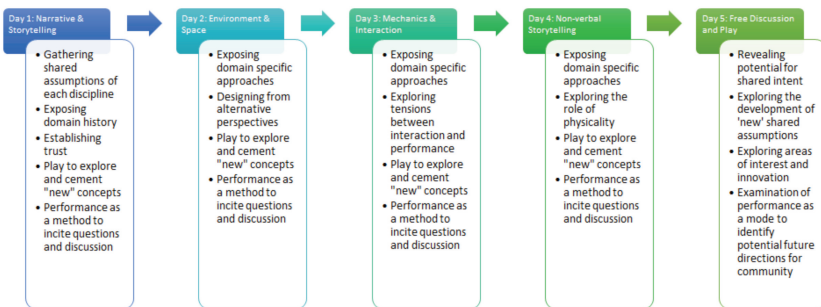


Figure 4: This figure details the goals of each day of the workshop which aimed to develop trust, a shared understanding and innovation through play in a developing community of practice.

From the performing arts, participants included actors, artistic directors, creative contributors and choreographers (referred to as ‘performers’

for the purposes of discussion) and within the field of videogames, collaborators included artists, game designers, sound designers and academics (referred to as ‘gamers’ for the purposes of discussion).

This project benefitted from an intensive development timeframe and shared intent, as the event was designed with an existing recognition by the participants of the potential benefits to their individual community of practice in working with other communities. The first day focused on developing trust by defining participants’ hopes for the week and through definition of domain-specific terms to form a basis of knowledge for the community. Each day of the workshop purposefully followed a predictable format; domain specific knowledge was shared and discussed each morning, and each afternoon this information was used to structure playful experimentation and to incite further discussion (Figure 4).

Structured play took the form of roleplaying, simulation, and experimental collaboration within given design constraints. Participants worked in small randomly-assigned groups throughout to ensure a breadth of cross-domain interaction. Time was allocated at the end of each day for groups to ‘perform’ the outcomes of their experimentation and to question, identify and explore tensions at the boundary between the communities. The format enabled knowledge transfer between groups and encouraged input from all participants to immerse each discipline within the world of the other. The final day leveraged the developing shared understanding to look into possible collaborations and future work through debate, discussion, and play around digitally-mediated art production.

Sharing Histories

On the first day of the workshop, each participant was asked to write three hopes for the week (anonymously) and to post these to the wall. This framed individual goals and formed a foundation for discussion. As the participants had come from a range of communities of practice, it was

important for introductions and discussion of intentions to take place, to clarify goals, pre-conceptions and introduce language from each field (Wenger-Trayner, 2015).

The identified hopes for the week demonstrate five key themes: the creation of work; networking to form meaningful collaborations; breaking down boundaries between communities of practice; gaining knowledge to expand personal practice; and looking for inspiration. The most prevalent of these themes was the hope that boundaries between communities of practice could be broken down. This permeated through each of the other expressed hopes for the week and seemed important to the achievement of personal agendas. “Mutual understanding of craft”, being “brave and sit[ting] with the awkward difference of practice” and “being less afraid of technology” are three of fifteen such explicit expressions from participants. These results verify that the project tapped into an existing “potential” community (Wenger-Trayner, 2015), as the group expressed willingness to learn from other communities of practice with a hope to form collaborations. Discussions around interactive theatre raised a concern that interactivity might subsume theatre as a standalone practice. The workshop valued each form in its own right and aimed to explore spaces of possibility at the boundaries of each practice. The workshop’s designed time for open discussion helped the group to form a shared understanding that it may be possible to bring together interactivity and performance to form a new community of practice, which does not subsume or replace traditional approaches to theatre, dance or gaming. Time for discussion within the workshop schedule was key to the definition of such parameters.

Play and Developing Community

Play became core to the identification of issues across practices. Each afternoon, playful tasks were assigned to randomly-generated groups of participants to encourage experimentation with the theme of the day. Outcomes of experimentation were performed to the entire community at the end of each session, to spark discussion and knowledge sharing.

Chance played a role not only in team generation but also in many of the experimental outcomes. On the first day, one of six small groups was formed by performers only (with no gamers) due to a chance formation of groupings. The designated task required the generation of an interactive narrative but the group had no previous experience of interactive narrative generation and thus utilised logical constraints and trial and error to create their performance. The final 'playable' performance (a playable performance is where an audience interacts with performers to shape the progression of a performance, perhaps through physical interaction or verbal direction) demonstrated innovation and creativity in the application of interactivity to a narrative structure, but the stories produced made very little narrative sense. In this case, chance allowed for novelty in the creative process but the lack of knowledge of interactive design led to gaps in understanding and suggests a need for diversity in groupings across communities of practice.

The application of competition and challenge within playful experimentation highlighted innovative potential. On day three, teams of two (performer and gamer) were tasked with the reinterpretation of existing board games focusing upon interaction and mechanics. The design process carried out by each team was very physical, with participants intuitively choosing to disrupt sedentary conventions of board games, challenging the physical, semantic, cultural and logical constraints of the given games through their experimental reinterpretation (Norman, 1998). Some participants imagined the removal of physical constraints such as gravity on the creation of a new game, and others reinterpreted jigsaws so that players had to run from one scattered piece to the next to win the game. Participants' familiarity with the board games inspired their challenge of conventions and led to competition and challenge underpinning the design of revised versions of the games. All of the eight games designed by teams had a win state and were multiplayer, relying upon competition between players to motivate progress. The basis of play upon competition within this activity differed greatly to the forms of play within all of the other outcomes of the week, where instead, groups utilized mimicry, physical

sensation, disorientation and chance. One unifying factor across all of the playable performances made during the workshop was that challenge was important, but competition less so. Instead, many of the outcomes required the player or audience member to interact and collaborate with fellow players to “solve” the performance.

In another task, play helped to uncover previously unspecified tensions between performance and games. On the final day, randomly-generated teams had to create a playable performance. One team tasked the audience to move through a space, two at a time – each in their own unique play/performance space. They became active participants required to collaborate with one another to solve the puzzle of the performance. The presentation of this performance to the community identified a need for many performers within the ‘play’ space to create an experience for only two audience members at a time. This sparked discussions around tensions in audience roles and commercial viability in interactive performance. In games, the experience tends to be one-to-one, where the player controls the unfolding of the interactive experience at their own pace. Within performing arts on the other hand the performer performs for a pre-defined length of time to an audience of many. The experimentation within the workshop identified a tension between the one-to-one system of games and the one-to-many system of performance. Play allowed the group to identify, question and explore the creative, conceptual, operational, and commercial issues around this tension.

Developing a New Community

Performance and Play finished with participants anonymously posting their goals on a wall for future discussion. This activity made it clear that a shared creative intent developed over the course of the week. None of the participants identified exploration of boundaries as a goal moving forward, but instead suggested the creative experimentation across performing arts and videogames. The responses can be organised into three categories: intent to experiment practically; intent to create work

around a designed theme; and intent to create specific artwork. Fourteen specific ideas for playable performances which cross digital and physical boundaries have been proposed, a further fourteen themes have been suggested to shape experimental development, and five participants generally suggested further practical activity in the field.

CREATIVITY AND CREATIVE COMMUNITIES – A THEORETICAL FRAMEWORK

The case studies present a range of creative ‘interventions’ which can help the formation of a potential community of practice into an active community of practice. They suggest that structured play and designed constraints to disrupt assumptions can inspire creativity and innovation. The role of the context provider is to recognise potential communities and to support their development by creating an environment where creativity can flourish. We propose that, when designing such interventions, there are four key stages that a context provider must consider in order to fully support a potential community of practice (Figure 5).

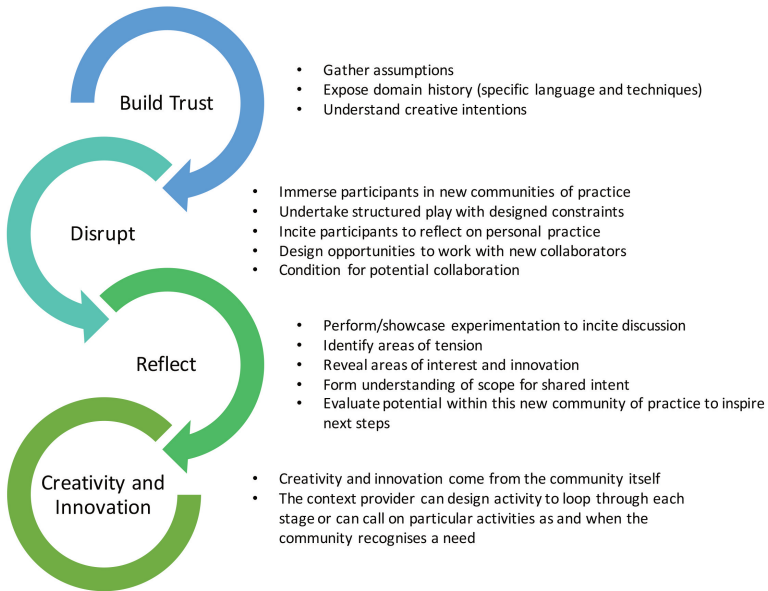


Figure 5: A framework for the context provider.

The first stage is the creation of trust within the community. All participants must find an equal footing on which to develop a new community, thus individual assumptions must be identified and explored as a group. Anonymity in initially presenting ideas (through posting thoughts to a wall) helps to form a basis for open discussion in a newly-formed community. Once confidence within the group is developed at this early stage, it is possible to invite participants to more openly express their thoughts, experiences and perspectives. Domain specific history, terms and techniques should be defined at this stage to form a base understanding from which outcomes can develop.

Stage two requires practical experimentation to inspire creativity and then the disruption of process through structured play and constraints. The case studies suggest that new collaborations help knowledge exchange and can prepare the community for collaboration beyond experimentation. However, there is no ‘perfect’ way to organise new

collaborations to ensure creative endeavor; within the case studies, both randomly assigned teams and self-organised teams produced mixed results. The context provider must therefore clearly define the goals of experimentation and the design constraints, and then interpret the relationships within the community to determine an appropriate group forming technique.

Stage three requires time and space for the entire community to experience and interact with experiments from stage two. The community should explore and discuss the possibilities and tensions presented by this work. Experimentation acts as a catalyst to reveal potential, form a shared understanding and inspire future work.

Stage four sees creativity and innovation emerge from inside the community. The context provider must design opportunities for the group to form their own concrete plan of action beyond the workshop events. Such plans help to motivate further interaction within the community (out with physical space) and provide targets for the group to work towards. Follow-up sessions (some months after the original series) are proposed as a useful tool to motivate activity and ensure the experiences of small (possibly self-formed) groups within the community are shared with the entire community. This stage would lead to (or be the dissemination of learning from) large-scale outcomes created by the community, representing the developed shared vision of the community.

In conclusion, we propose that the framework presented within this research relies upon a context provider as an individual or organisation that recognises the need for and designs a space to support creative endeavor within a potential community of practice. The context provider motivates or disrupts practice through the design of conditions and constraints to allow communities to question competences, shared assumptions and trigger creativity. It is not possible to design a community of practice; however, it is possible to design spaces and

activities within which communities can foster innovation and creativity for themselves.

ACKNOWLEDGMENTS

We thank all of the participants in the Development Cultures and Play and Performance projects for their participation in the event and in support of this research. We gratefully acknowledge the participation and support of the National Theatre of Scotland, Dundee Repertory Theatre, Scottish Dance Theatre, Lucky Frame, Secret Experiment, Quartic Llama, Guerrilla Tea, Ninja Kiwi, Hidden Armada and Abertay University. We also gratefully acknowledge funding support from Abertay University to facilitate the Development Cultures project.

BIBLIOGRAPHY

1871 (2016) About Us. Website. Available at <http://www.1871.com/about-1871/> (Accessed April 2016)

AbertayGameLab. (2014) #AGLjam. Website. Available at https://storify.com/AbertayGameLab/agljam?utm_source=story&utm_media=storypage&utm_content=related (accessed August 2015)

Ball, K. (2014) The Social and Cultural Impacts of Regeneration on Particular Locations in Manchester City and Salford Quays. Available at <http://www.thebuildingfuturesgroup.com/wp-content/uploads/2014/07/Student-Ambassadors-Report-Katherine-Ball.pdf> (accessed August 2015)

Bateson, P. (2013) *Play, Playfulness, Creativity and Innovation*. Cambridge University Press.

Caillois, R. (1961) *Man, Play and Games*. University of Illinois Press.

Chapain, C. Cooke, P., De Propriis, L., MacNeill, S. & Mateos-Garcia, J. (2010) *Creative Clusters and Innovation: Putting Creativity on the Map*. Available at https://www.nesta.org.uk/sites/default/files/creative_clusters_and_innovation.pdf (accessed August 2015)

Cotter, H. (2006) *The Collective Conscious*. Available at <http://www.nytimes.com/2006/03/05/arts/design/05cott.html?pagewanted=all&r=0> (accessed August 2015)

Creative Scotland. (2014). *Unlocking Potential, Embracing Ambition: A Shared Plan for the Arts, Screen and Creative Industries*. Available at http://www.creativescotland.com/__data/assets/pdf_file/0012/25500/Creative-Scotland-10-Year-Plan-2014-2024-v1-2.pdf (accessed August 2015)

Crecente, B. (2014) *As game players diversify, developers start to rethink the stars of their games*. Available at <http://www.polygon.com/2014/6/23/5834628/women-in-video-games-heroines-e3-2014> (accessed August 2015)

Crogan, P. (2014) *Mapping the Collective: Potentials of Indie Game Collaboration*. Presentation. Digital Cultures Research Centre. Bristol, England.

Csikszentmihalyi, M. (1996) *Creativity: Flow and the Psychology of Discovery and Invention*. New York, Harper Collins.

Dixon, S. (2007) *Digital Performance: A History of New Media in Theatre, Dance, Performance Art and Installation*. MIT Press, Cambridge, Massachusetts.

Eurogamer. (2014) *Accelerunner – Eurogamer Let’s Play – EGX 2014*. Video. Available at <https://www.youtube.com/watch?v=O4X-hsPEWLY> (accessed September 2015)

Flanagan, M. (2009) *Critical Play: Radical Game Design*. The MIT Press, Cambridge.

Fullerton, T. (2014) *Game Design Workshop: A Playcentric Approach to Creating Innovative Games*. CRC Press, Florida.

Gamma Space Collaborative Studio (2016) What it's All About. Website. Available at: <https://bentomiso.com/about> (Accessed April 2016)

Goddard, W., Byrne, R. & Mueller, F. (2014) Playful Game Jams: Guidelines for Designed Outcomes In *IE2014 Proceedings of the 2014 Conference on Interactive Entertainment (IE2014 2014)* pp. 1 – 10.

Guevara-Villalobos (2011) Cultures of independent game production: Examining the relationship between community and labour.

In *Proceedings of DiGRA 2011 Conference: Think Design Play*. (DiGRA 2011)

Hidden Armada. (2014) *AGLjam Game Phoenix Down*. Website. Available at <https://storify.com/HiddenArmada/agljam-game-phoenixdown> (accessed August 2015)

Howard-Jones, P., Taylor, J., and Sutton, L. 2002. "The Effect of Play on the Creativity of Young Children During Subsequent Activity" in *Early Child Development and Care* 172 – 4, pp. 323-328.

Huizinga, J. (1949) *Homo Ludens: A Study of the Play-Element in Culture*. Routledge and Kegan Paul, London.

Hunt, N. (2014) "Had such an awesome time at #AGLJam! Met lovely people, played amazing games and started a Hyper-Realistic revolution with @AlanZucconi!". 27 July, 2014. Tweet. Available at <https://twitter.com/nicolllhunt/status/493416608468316160> (accessed August 2015)

Hutchinson, S., Fenton-O’Creedy, M., Goodliff, G., Edwards, D., Hartnett, L., Holti, R., Mackay, E., McKeogh, S., Sansoyer, P., Way, L. (2015) “Introduction: An Invitation to a Conversation” in *Learning in landscapes of practice: Boundaries, identity and knowledgeability in Practice-Based Learning*. Wenger-Trayner, E. Fenton-O’Creedy, M. Hutchinson, S., Kubiak, C. Wenger-Trayner, B (eds.). Routledge, London, UK, pp. 01-09.

Jenkins, H. (2005) “Games, the New Lively Art” in *Handbook of Computer Game Studies*. Goldstein, J., & Raessens, J. (eds.). MIT Press, Cambridge, Massachusetts, pp. 175-192.

Jump Stars (2016) Website. Available at <http://www.jumpstarsgame.com> (accessed December 2015)

Kester, G. (2004) *Conversation Pieces: Community and Communication in Modern Art*. University of California Press, Berkeley.

Kline, S., Dyer-Witheford, N. & De Peuter, G. (2003) *Digital Play, The Interaction of Technology, Culture, and Marketing*. McGill-Queen’s University Press, Montreal.

Kwastek, K. (2013) *Aesthetics of Interaction in Digital Art*. MIT Press, Cambridge, Massachusetts.

Landry, C., and F. Bianchini. (1995) *The Creative City*. Demos, London.

Laurel, B. (2014) *Computers As Theatre*. (2nd. ed.): Addison-Wesley, New Jersey.

Locke, R., Parker, L., Galloway, D. & Sloan, R. (2015) *The Game Jam Movement: Disruption, Performance and Artwork*. In *Workshop Proceedings of the 10th International Conference on the Foundations of Digital Games*. (FDG 2015).

McClelland, J. (2007) *Body and Mind: Sport in Europe from the Roman Empire to the Renaissance*. Routledge, London.

Norman, D. (1998) *The Design of Everyday Things*. MIT Press, London.

O’Grady, A. (2011) “Interactivity: Functions and Risks” in *Performance Perspectives: A Critical Introduction*. Pitches, J. Popat, S. (eds.). Palgrave Macmillan, Hampshire, UK, pp. 165–172.

ONF-NFB (2016) *Mission and Highlights*. Website. Available at: <http://onf-nfb.gc.ca/en/about-the-nfb/organization/mandate/> (accessed April 2016)

Pearce, C. (2011) *Communities of Play: Emergent Cultures in Multiplayer Games and Virtual Worlds*. MIT Press. Cambridge, Massachusetts.

Play Collaborative Arts (2016) *We’re on a Mission to Play*. Website. Available at: <http://www.artsatplay.com/#!mission/c1xtw> (accessed April 2016)

Practice from Different Game Jams in Workshop Proceedings of the 10th International Conference on the Foundations of Digital Games. (FDG 2015).

Reng, L., Schoenau-Fog, H & Kofoed, L. (2013) *The Motivational Power of Game Communities – Engaged through Game Jamming in Workshop Proceedings of the 8th International Conference on the Foundations of Digital Games*. (FDG 2013).

Russ, S. W. (2015) “Play, Affect and Creativity: Theory and Research” in *Affect, Creative Experience, and Psychological Adjustment*. Russ, S., W. (eds.) Taylor and Francis, Philadelphia, USA, pp. 57-76.

Sawyer, K. (2008) *Group Genius: The Creative Power of Collaboration*. Basic Books, New York.

Salen, K. & Zimmerman, E. (2004) *Rules of Play: Game Design Fundamentals*. MIT Press, London.

Schein, E. H. (2010) *Organizational Culture and Leadership*. John Wiley & Sons, San Francisco, CA.

Shyba, L. M. (2007) *The Spontaneous Playfulness of Creativity: Lessons from Interactive Theatre for Digital Games in Proceedings of the 2007 DiGRA International Conference: Situated Play*. (DiGRA 2007), pp. 779-782.

Sicart, M. (2014) *Play Matters*. The MIT Press, London.

Sternberg, R. J., and Lubard, T. I. (1999) "The Concept of Creativity: Prospects and Paradigms" in *Handbook of Creativity*. Sternberg, R., J. (eds.), pp. 3 – 14.

Stokes, P. (2005) *Creativity from Constraints: The Psychology of Breakthrough*. Springer, New York.

Sutton-Smith, B. (2009) *The Ambiguity of Play*. Harvard University Press.

Vernon, PE. (1989). "The Nature-Nurture Problem in Creativity" in *Handbook of . Glover, J. A., Ronning R. R., and Reynolds, C.R. (eds.)* Springer US, pp. 93-110.

Watershed. (2015) About Us. Website. Available at <http://www.watershed.co.uk/about/about-us> (accessed August 2015)

Wenger, E. (1998) *Communities of Practice: Learning, Meaning and Identity*. Cambridge University Press.

Wenger, E., McDermott, R.A. & Snyder, W. (2002) *Cultivating Communities of Practice: A Guide to Managing Knowledge*. Harvard Business Press, Boston.

Wenger-Trayner, E. Wenger-Trayner, B. (2015) "Learning in a landscape of Practice: a Framework" in *Learning in Landscapes of Practice: Boundaries, identity and knowledgeability in Practice-Based*

Learning. Wenger-Trayner, E., Fenton-O’Creevy, M. Hutchinson, S., Kubiak, C. Wenger-Trayner, B. (eds.). Routledge, London, UK, pp. 13-29.

Wright, S. (2015) DShed: Past, Present & Future. Available at <http://www.watershed.co.uk/dshed/articles/dshed-past-present-future> (accessed August 2015)

Wood, J. (2011) “Gaming and Performance: narrative and Identity” in *Performance Perspectives: A Critical Introduction*. Pitches, J. Popat, S. (eds.). Palgrave Macmillan, Hampshire, UK, pp. 115–122.

4.

Playful Fandom

Gaming, Media and the Ludic Dimensions of Textual Poaching

Orion Mavridou

Transactions of the Digital Games Research Association

2017, Vol. 3, No. 2, pp. 89-111

ISSN 2328-9422

<http://todigra.org>

TEXT: Licensed under Creative Commons Attribution (CC BY-NC-ND 2.5) <http://creativecommons.org/licenses/by-nc-nd/2.5/>

IMAGES: All images appearing in this work are property of the respective copyright owners, and are not released into the Creative Commons. The respective owners reserve all rights.

ABSTRACT

This paper discusses the idea that fandom, as the collection of activities and behaviours relating to the fan identity, has a ludic dimension, and that said dimension merits individual inquiry from a game-studies perspective. Furthermore, it is argued that there is mutual benefit in exploring the intersection between fan studies and game studies, which has so far been overlooked in research, design and direction.

Keywords

games research, fandom research, interdisciplinarity, fans, fandom, games, gamers, play

INTRODUCTION

The study of fans and fandom, just like the study of games and play, is known for being relatively young and saddled with notions of triviality. The ambiguity of the studied subject and the interdisciplinary character of both research fields have created problems with defining and maintaining their identity as distinct disciplines. In the last few years, however, innovations from both fields have been successfully incorporated into other areas, from economics (Neumann and Morgenstern, 1944; Leonard, 2010), to biology (Sigmund, 1993), to global culture and education (Vasquez, 2003; Black, 2008; Zimmerman, 2009), demonstrating their relevance. As the academic and non-academic interest in fans, gamers and related identities is increasing, I argue that there is notable value in exploiting existing overlap in theory and methodology. By seeing gamers as fans (rather than only users or players), and fandom as a playful activity (rather than only creative or consumptive), we can enrich discourse and gain more insight into a number of existing questions.

This paper is split into three sections. The first two serve as a baseline for the ensuing conversation, giving brief consideration to the current state of game and fandom studies, before moving into the main part of the argument and conclusions.

Gaming at the Crossroads

In 1938, an age sadder than ours, Johan Huizinga made bold to theorise play as a fundamental element of human culture and call our species

homo ludens, man the player¹. Almost a century later, the study of play and games is still widely regarded as being in its formative years, with sparse theoretical frameworks and an eclectic approach to methodology.

The 2015 DiGRA conference in Lüneburg, Germany opened with the theme “Diversity of Play,” addressing not only the endless variety of the play element in culture, but also the endless methods academia has employed over the years to capture and understand it. This is but one instance where the diversity of play and the diversity in the study of play are brought into question, as fast development of both has made this conversation one of high relevance in the past few years. A short history and a number of unusual circumstances have shaped games scholarship into an experimental and interdisciplinary space, one without the defined contours of more traditional disciplines but with overflowing innovation. The elusive definition of play and the cultural baggage associated with this most “trivial” of subjects have necessitated an inventive approach to research (Aarseth, 2003; Consalvo, 2006; Lammes, 2007; Mayra, 2008, 2009; Mayra et al., 2012; Lankoski and Bjork, 2015). Interdisciplinarity has arguably enriched game scholarship, but it has also contributed to anxious questions about its present and future as a sovereign academic field. The plurality of methods, voices and approaches in the study of play has created as much insight as it threatened incoherence. Being able to observe playfulness in so many aspects of the contemporary life has also opened up the category of games to renewed ontological debates, which can be seen as burdening a conversation area already heavy with fatigue. Expanding the scope of research to thoroughly embrace the diversity of play has been argued to come with the risk of rendering game studies obsolete. This problem was prominent enough to be featured in the conference’s main aims.

A panel discussion, led by Frans Mäyrä, titled “From Game Studies to Studies of Play in Society,” sought to address the problem more specifically and discuss a few of the different conflicts arising at this

1. A reader (or fan) of Huizinga might recognise this sentence as a play on the wording of his iconic introduction to *Homo Ludens*.

perceived research crossroad. While it is not within the scope of this paper to try and summarise the entirety of the nuanced points presented by the speakers, there is a small selection of ideas I would like to bring to attention as a primer for my own argument. In particular, the criticism of Joost Raessens, who questioned the narrative implied by the panel's title. As Salen and Zimmerman have illustrated (2004), games and play exist simultaneously as subsets and oversets of each other. The study of the two, Raessens asserted, has always maintained an intrinsic and unseverable connection. There is no movement between the study of games and the study of play in that regard, and the related research always happens within the wider context of society.

In the panel discussion and his own project, *Playful Identities* (2006; 2015), Raessens traced his position from Huizinga's work to Heraclitus and Schiller, demonstrating how the modern collective phenomenon we've come to call "the ludification of culture" has in fact very deep roots, and that the study of games as we know it has already accommodated said phenomenon this far. He suggested that game studies could adopt a form of strategic essentialism; in finding and maintaining a conceptual, theoretical and methodological core, we could preserve the unique character and purpose of games as a discipline, while remaining open to experimentation and collaboration.

The entire discussion is, I think, characteristic of the currently perceived pitfalls and limitations of game scholarship. As I advocate for exploring the intersection between game studies and a related discipline, I do so with the belief that the theoretical work produced by each field already demonstrates a prototypical core, one that is strong enough to be relevant far outside the area of its original inception.

Fandom at the Crossroads

Before continuing, it would be best to provide more information on what "fandom" generally means and how it has been studied so far. Much like

play or art, fandom is a term of passing familiarity, often understood on an instinctive level, even though its exact definition might be vague. We can recognise it in literature and music, in artwork, costume and an assortment of collection-centred hobbies. Some of its more visible and notorious forms can take the shape of women fainting in the presence of the Beatles, a masquerade of young people dressed as fictional characters or entire rooms occupied by pop culture memorabilia in the tradition that Forrest J. Ackerman made iconic in the late 1930's. Popular discourse surrounding it comes with its own set of stereotypes and shallow interpretations, often prominent enough to be reproduced in related media as a form of self-parody or internalised critique (Ogg, 2010; Figal, 2010). Atypical patterns of consumption and a deep devotion to the fan object tend to form the common understanding of fandom-related behaviour, which can easily lead an observer into reading it as a pathological condition (Jensen, 1992).

The Oxford English Dictionary simply defines “fan” as a “devotee of a particular activity or performer.” Abercrombie and Longhurst (1998) trace the origins of the term to 18th century American journalism, where it was used to describe passionate baseball spectators². Before that, “fan” was a common abbreviation for “fanatic,” meaning religious zealot. This notion of religiosity and fervour is still evident in modern understandings of fandom, surviving intact in terms like “fan pilgrimage” and “cult media.” Mark Duffet (2013) was quick to point out that even “devotee” as a synonym implies a submission of self or identity to the fan object, and a notable amount of material in fandom scholarship has been specifically aiming to dismantle these connotations of mindlessness and pathology. Three seminal studies, published in 1992 in close proximity but independent of each other (Bacon-Smith, Jenkins, Lewis), made a particular effort to reframe fandom as affective, productive and socioculturally significant. In her ethnographic account of the early Star

2. Researchers have been known to use terms like “fan,” “enthusiast,” “connoisseur,” “cultist,” “audience,” etc. interchangeably, despite the supposed differences in meaning. Abercrombie and Longhurst (2014) made an effort in distinguishing these categories, though the distinctions remain arbitrary and their proposed taxonomy is not universally accepted.

Trek zine culture, Camille Bacon-Smith portrayed fandom as a transgressive and radical form of expression; a means of exercising personal agency within the confines of socially prescribed femininity. Henry Jenkins, in *Textual Poachers*, recognised in fans a vast amount of potential in terms of creativity and an often impressive accumulation of knowledge on their given subject. Fandom, according to Jenkins, can be defined as the exceptional reading of media texts which might be unexceptional on their own. This perspective would denote fans as a skilled and critical audience whose labour adds value to the source material, yet is trivialised by association with “trivial” culture. Lisa Lewis began her introduction to *The Adoring Audience* by wondering why fans are so maligned and stigmatised, a question that Zubernis and Larsen (2012) were still in the process of answering twenty years later. The fans in that context are potentially undermined by dominant ideas of taste, and the inherent imbalance of power between media producers and media consumers.

Beyond the endless justification of fandom’s existence, however, and the scholarly affirmation of the fans’ creativity, the related field of study has gone in circles in terms of defining the studied subject itself. As at the time of writing there is no consensus on what exactly constitutes a “fandom” or what characterises a “fan.” Different authors have described fandom as fluid, multifaceted and difficult to pinpoint with any measure of accuracy. In some of the simplest terms, Cornel Sandvoss (2005) describes it as the “regular, emotionally involved consumption of a given popular narrative or text.” Lisa Lewis (1992) refers to fans as the “most visible and dedicated of any audience,” but these notions of involvement and dedication have proven very difficult to delineate. In the spectrum between passive reception and active engagement, fans have been known to occupy multiple roles simultaneously, which complicates the performance of their identity. Matt Hills (2002) has criticised attempts to simplify fandom as either a mode of consumption or a form of cultural resistance, since these seemingly incompatible behaviours can be seen coexisting within the fan who functions as a very predictable consumer while at the same time transgressing dominant culture, industrial media

production and established hierarchies of taste. John Fiske (1987) famously argued that the ways audiences derive meaning are so complicated that “there is no text, there is no audience, there are only processes of viewing” and any effort at essentialism will inevitably fail.

This ambiguity is arguably the first and most obvious common feature between fandom and play. Both function as umbrella terms to denote spaces of inquiry that are unstable but ripe with possibility, roughly situated just outside what current theory can outline.

Fandom at Play

As mentioned before, the main argument for this paper is that fandom, in its multitude of expressions and definitions, has a ludic dimension. From that perspective, it can be studied not only as a culture (e.g. ethnographically) or a collection of texts (e.g. through textual analysis), but also as a system, or constellation of systems, that facilitate play. It would be prudent to note that a typology of these playful behaviours would be beyond the scope of this paper. The literature-based research presented here is considered complete and self-contained, while simultaneously being part of a bigger project.

The theory which serves as the basis for my proposed perspective on fandom comes from Salen and Zimmerman’s book, *Rules of Play* (2004), where they define play as “free movement within a more rigid structure.” Their definition, while by no means perfect or all-encompassing, has a remarkable openness. It can afford enough flexibility to allow multiple interpretations in different levels and contexts without compromising on nuance. Moreover, it succinctly and elegantly distils the essence of several earlier, less minimalist definitions.

Citing Huizinga (1955) or Caillois (1961; 1962) might seem like a more obvious choice for this purpose, as the scope of their foundational work was broad enough to encompass play in every facet of culture, and as demonstrated in the previous section, fandom has been studied

primarily as a culture. Echoes of their theories certainly resonate within my argument, but overall I found certain aspects to be too vulnerable to criticism, which prevented me from implementing their definitions of play directly. For example, Huizinga's mention of fixed rules or Caillois' claim that play is, by its own nature, unproductive. Aside from fandom, multiple other forms that we commonly acknowledge as games or manners of play would fall outside the boundaries these authors have set. The limitations of their theoretical work have been analysed and critiqued at length in related literature (Pearce, 2006; Consalvo, 2009; Frissen et al., 2015). By comparison the Salen and Zimmerman definition, which was partially developed in response to these earlier theories, does not present the same problems.

In addition, it incorporates three formalised ways to conceptualise play; game play, ludic activity and the more general notion of being playful. To summarise these categories, game play is the most narrow, involving players experiencing play through the kind of rule-bound system we typically call a game, e.g. playing chess. Ludic activities would include types of freeform play that happen outside of game systems, e.g. playing with a stuffed toy. The notion of being playful mainly refers to a particular state of mind imposed on top of ordinary actions. It is the broadest of all categories, including things like the playful delivery of a smile or a play upon words. The theoretical models derived from Huizinga and Caillois reference the latter two categories more, but in choosing the Salen and Zimmerman model instead, I would like to argue the idea that fandom can manifest not only as play in an abstract sense, but as a game; a system that involves players, rules, artificial conflict and quantifiable outcomes.

For example, in *Convergence Culture* (2008), Henry Jenkins describes the fandom emerging around the CBS show *Survivor*. One of the biggest aspects of the show's appeal was arguably the secrecy surrounding its production, with each episode being shrouded in mystery until its broadcast. The category of fan known as the "spoiler" would be the most invested in predicting the show's plot. By engaging with similar-

minded fans on specialised forums, the spoilers would take advantage of their collective resources and intelligence (e.g. analysing episodes frame by frame) to challenge the show's producers (in deciphering small clues to predict the next episodes). Jenkins is using very deliberate language to describe this activity as a competitive game people engaged in, with defined rules and boundaries about the kinds of information that could be accepted into the spoiler rhetoric, self-identifying players and outlined goals. This behaviour observed around *Survivor* is not unique, and Jenkins himself directly compares his findings to his own previous work on the *Twin Peaks* fandom, where debating solutions to the show's overarching mystery was similarly structured as a logical playful sequence.

Resistant and Transformative Play

By applying the Salen and Zimmerman definition of play to fandom in the wider sense, we can immediately begin to observe how the concepts of the "rigid structure" and the related "free movement" can be projected onto a number of situations:

If we consider fandom in the context of media production, the rigid structure would represent the moral, legal and financial boundaries of the centralised media industry. The free movement, in that regard, would be the creation and distribution of unauthorised amateur content. Jenkins mentions in his 1988 essay on *Star Trek* that "for the fan, reading becomes a kind of play, responsive only to its own loosely structured rules and generating its own kinds of pleasure." The type of reading he refers to is the act of repeat, active consumption which aims to deconstruct and reassemble the media text, as much as internalise it. Amateur production stems from this kind of reading, as fans attempt to extend the experience of their favourite TV show, film, book or game through fan writing, fan art, etc. Patterns of engagement that fall outside predictability are not always welcome by the product and profit driven media industry (Mavridou, 2013). The type of active audience described

by Fiske and Jenkins can be interpreted as rebellious and out of control, frightfully defiant of centralised hierarchies of taste and at constant danger of breaking the law (Tushnet, 1996, 2007; Lessig, 2001, 2008).

In *Rules of Play*, Salen and Zimmerman have labelled this type of play “resistant,” describing it as being representative of a friction that naturally occurs between the free movement of play and the rigid structure that contains it. Resistant play exemplifies that friction, making the magic circle very visible in the process. The notion that fandom is a form of resistance is very prevalent in fan studies literature (Fiske, 1989a, 1989b; Bacon-Smith, 1992; Jenkins, 1992; Hills, 2012). By conceptualising fandom as playful resistance, however, we can immediately begin to shed light on currently unresolved problems. As mentioned earlier, Matt Hills posed the question: if fans are a resistant audience, how can they simultaneously function as the most loyal of consumers? The thing to point out then would be that resistant play is not the same as pure, radical resistance. The former doesn’t seek to dismantle the rigid structure, but merely maintain the freedom of movement which characterises it. Play can be transformative, and resistant play is arguably the most likely one to instigate transformation (Salen and Zimmerman, 2004). Transformative play will, over time, shape the rigid structure around itself, but in eliminating the structure completely it would subsequently push itself out of existence. Instances of playful resistance and indeed, transformation have been observed throughout the evolution of the media industry, which has come to embrace fan input and participation in unprecedented ways. Fandom, though, cannot exist in its current form without the rigidity of centralised media production, so despite any tension or friction, its resistance will likely always maintain its playfulness and not seek radical change.

Theatre, Fantasy and Narrative Play

If we consider fandom in the context of artistic expression or creativity, the established narrative canon within which a fan creator operates

would be construed as the rigid structure. The free movement then would represent the act of appropriation and remixing. By borrowing and puppeting the characters, settings and other narrative elements of an established story, the fan creator operates within the boundaries of said story but in an almost entirely fluid, theatrical manner. Eiji Ōtsuka (2010), in discussing the fandom that appeared around the anime and manga series *Captain Tsubasa*, drew parallels between *dōjinshi*³ production and the tradition of kabuki theatre. The collective narrative tradition of kabuki was formed through repetition of performance and multiple dramatic adaptations of the same base material. Stories are not static, and new ones are expected to emerge from fragmenting and remixing the old ones. The talent of an author in kabuki is not judged on originality, but on their ability to cut out a slice of this grand narrative and present it as a single theatrical work, a new interpretation. Francesca Coppa (2006), independently came to a similar analogy between fandom and theatre. Fan fiction, she argues, has more in common with the performative rather than the literary genres, despite being presented in prose form. The narrative parts of the original become objects on the proverbial stage of the story, where they can be endlessly manipulated into new arrangements. The fan author in this instance merely utilises words in the absence of more convenient means of expression. In the above two examples, it is important to point out that theatre is something fundamentally played. Much like any known game setting, the stage needs human participation to put things into motion and breathe life into it. In the case of fandom, the canonical story is spontaneously made into a stage, a playground, a system which can facilitate narrative play.

Furthermore, the particular practice of cosplay also has the added advantage of containing the word “play” in its name. The limits of perceived reality, the physical boundaries of the body and the societal etiquette which governs things like gender presentation are often the rigid structures an aspiring cosplayer playfully explores (Gn, 2011;

3. “Dōjinshi” is an umbrella term derived from the Japanese language. It has mainly come to be associated with self-published fan comics, but technically it encompasses all kinds of derivative media products.

Bainbridge and Norris, 2013; Mavridou, 2015). While elements of canon appropriation mentioned previously would also apply to the process of constructing a costume and performing a character, the fact that cosplay is a deeply-embodied, lived experience can potentially put it on a different circle of play potential compared to other creative fan practices. Fron et al. (2007) have in the past examined cosplay as a play form related to dress-up and make-believe, as well as an extension of a player's relationship to their customisable avatars. Nicole Lamerichs (2010, 2013, 2014), following a similar line of thought, made explicit references to the "ludology" of cosplay, emphasising aspects of fantasy play and performativity, over the pragmatic fashioning of the costume.

Playing with Videogames

In the more specific context of games the raw materials, which comprise a game, either analogue or electronic, can similarly be utilised in ways the original developers never intended. By hacking into the game's code, for example, the programming and assets can be remixed into something entirely new, from a fan sequel to an animated film or even an art installation. By taking apart the pieces of a board game, new rules and mechanics can be applied. A game experience that was designed for narrative and a slower contemplative pace can be rewritten as a race against the clock, which can only be made possible by the creative use of bugs and glitches. The rigid structure in the above examples is defined as the game's own boundaries, e.g. the dimensions of physical pieces, electronic controllers or lines of code. Newman, in his extensive study on videogame fandom, *Playing With Videogames* (2008), detailed a long collection of free-moving activities that take place within the rigid means of the game code under the term "superplay." Players who engage in this type of free movement or freeform play are known to identify themselves as fans of the games they repurpose. The amount of time and effort, or devotion, if we would use that term, required to explore the inner mechanisms of an existing game and reach the level of mastery required to remix it, is arguably enough on its own to denote this type of player

as a “fan” according to definitions discussed earlier in this paper. Ōtsuka (2010) made direct comparisons between game hackers and other types of culture-remixing fans, interpreting their behaviour as essentially the same. Robert Jones (2006) described game machinima as a form of transformative play, and read into it typical fandom-related notions of cultural resistance and transgression.

Intersections in Scholarship

As evidenced by the above, the concept of fandom as playful activity is not entirely unknown to either game or fan scholars. The latter in particular have made a number of passing mentions to it. In *Textual Poachers*, using the example of the Velveteen Rabbit, Jenkins characterises fandom as a manner of affective play, which adds emotional and personal value to the fan object while dismantling it. Jonathan Gray (2007) described certain fans’ engagement with political news as a blend of rational opinion and emotive playfulness. Hills (2002) observed playfulness in the fan’s crossing of boundaries between the inner and the outer self, fantasy and reality. Harrington and Bielby (1995) similarly observed that some fans appear to play with the boundaries of fiction without losing their own sense of identity. The latter three authors all partially adapted Winnicott’s theory (1973), conceptualising fandom as a manner of play involving cultural artefacts functioning as transitional objects. Hills in particular gave one possible definition of fandom as something “formed around any given text when this text has functioned as a proper transitional object in the biography of a number of individuals.” The purpose of fandom playfulness, according to that, is to alleviate existential anxiety.

The relationship between play and performativity, as well as performativity and fandom, has been subject to academic enquiry in separate studies (Lancaster, 1997, 2001; Jenkins, 2006; Fernández-Vara, 2009a, 2009b; Bennet and Booth, 2015; Brenner, 2015). The simultaneous connection between all three concepts, however, is not

common in scholarship. Paul Booth is notable for including “play” in the title of his 2015 book *Playing Fans: Negotiating Fandom and Media in the Digital Age*. His study explicitly references the Salen and Zimmerman definition of play, alongside nods to the theoretical work of Huizinga, before settling on Caillois whose typology of play includes mimesis and agon; categories that suit fandom activities such as parody, pastiche, roleplay and competition which Booth examines. Definitions of play serve as a framework of understanding fandom, but outside the introduction, the matter is not explored any further, as the rest of the book is centred on how fans interact with the media industry.

In that regard, the conceptualization of fandom as playful, or play as fannish has an element of novelty but is not original. Scholars who have acknowledged these ideas, however, tend to reference them without delving into the subject at any considerable depth or attempting a more thorough interdisciplinary approach between the corresponding disciplines. The examples I have presented throughout this section of the paper should help to demonstrate that fandom already goes a lot further than non-competitive, affective or fantasy play. Being able to see fans as players can offer new angles to our currently limited comprehension of their activities and behaviours. Seeing gamers as fans can similarly deepen our understanding of the play experience, and how the latter influences game development and design. Amongst game researchers, Steven Jones (2008) could trace the design of *Katamari Damacy* to the Japanese otaku⁴ culture of collecting fan memorabilia. Olli Sotamaa (2005) found exploitable value in videogame fan labour. Broc Holmquest (2013) analysed the fandom around *Silent Hill Downpour*, arguing that games often demand active reading and metatextual participation to complete their narrative. A narrative like that of *Silent Hill*, he asserts, cannot function without the active reading and conversation of the fans who surround it; this kind of participation, the

4. “Otaku” is another Japanese term, situated somewhere around the notion of the “obsessive fan” or the archetypal “basement dweller.” It has been appropriated in English to neutrally (or even positively) describe a fan of Japanese pop culture, but the meaning is different in the original language where it has clear negative connotations.

labour involved in assembling and decoding the narrative's many pieces, is built into the game's design as an integral part of the experience. Mia Consalvo (2003) looked at the production of game walkthroughs as a form of intertextual reading and narrative making, directly comparing it to other forms of media fan engagement. Consalvo concluded that "positioning gamers as fans or active audience members is an important and significant move."

Scholars like Saito Tamaki (2011) have theorised that modern fans might belong to a new type of personality that derives deeper satisfaction and stimulation from their engagement with media, and is therefore better equipped to face a world which is growing increasingly saturated with media texts. Others, like Cavicchi (1998), have instead conceptualised fan behaviour as an internalised performance, and a mindset which in some manner can be found within everyone. Regardless of where the truth might be on that spectrum of perception, fandom can serve as a model to explore the new identities and typologies of pleasure emerging in and around gaming. The knowledge accumulated by fans and gamers alike is arguably an important form of literacy, increasingly relevant in the age of information. And phenomena like #gamergate have shown that in seeing the gamer identity as a fan identity, we can gain fundamental insight into the deep emotions it inspires and the ways it is policed.

Conclusion

The diversity and ambiguity of the play element in culture has been acknowledged in scholarship since Huizinga's foundational work in the late 1930's. These characteristics of play complicate academic research, largely necessitating an interdisciplinary and experimental approach. The latter could be argued to have benefitted discourse, but as the field of games studies has been seeking to define its own boundaries during the last few years, the fluidity and complexity of the researched subject has also contributed to a certain anxiety about the future. The field of

fandom studies also suffers from similar ontological and epistemological concerns, as well as comparable accusations of triviality and a short history in academia. Fandom has been observed to be just as diverse and ambiguous a phenomenon as play, with a historically enduring and pervasive presence in multiple facets of culture. The significance of both subjects has already been defended rigorously within academia, and research results continue to support such defense.

My belief is that these two academic fields share enough common ground and have matured enough, that theory and methodologies can be exchanged without compromising the integrity of the source. While our research designs evolve alongside our understanding of these complex subjects, the literature-based argument presented here is meant to serve as a basis for further discussion and empirical application. The aim of the paper is to make a case for the benefits of conceptualising fandom as a form of play, and respectively, conceptualising gamers as fans. As demonstrated by the outlined examples, the proposed interdisciplinary approach can offer game studies valuable insight into a number of subjects, e.g. the productive qualities of playfulness, the unique sensibilities of the gamer or the role of metatextual engagement in the experience of game play. A review of the literature shows that research has already taken place in this scholarly intersection, though not in any considerable depth. Fandom scholars have acknowledged the playfulness in fan activities and game scholars have explored the fannish dimension of gaming. Beyond that, however, the conversation remains limited and the aforementioned intersection largely unexamined. The conclusion of my argument is therefore one about perspective; about expanding (rather than limiting) our direction, and taking advantage of research potential that could very well be hidden in plain sight.

References

Aarseth, E. "Playing Research: Methodological approaches to game analysis." In *Proceedings of the Digital Arts and Culture Conference*, pp. 28-29. 2003.

Abercrombie, N. and Longhurst B. *Audiences: A sociological theory of performance and imagination*. Sage, 1998.

Bacon-Smith, C. *Enterprising women: Television fandom and the creation of popular myth*. University of Pennsylvania Press, 1992.

Bainbridge, J. G. and Norris C. J. "Posthuman Drag: Understanding Cosplay as Social Networking in a Material Culture," in *Intersections: Gender, History and Culture in The Asian Context* 32 (2013), pp.1-11.

Bennet, L. and Booth, P. J. "Performance and Performativity in Fandom" [editorial], in *Transformative Works and Cultures* 18 (2015). Available at <http://journal.transformativeworks.org/index.php/twc/article/view/675> (accessed Mar. 2017)

Black, R. W. *Adolescents and online fan fiction*. Peter Lang, 2008.

Booth, P. J. *Playing Fans: Negotiating Fandom and Media in the Digital Age*. University of Iowa Press, 2015.

Brenner, L. S. *Playing Harry Potter: Essays and Interviews on Fandom and Performance*. McFarland & Co, 2015.

Caillois, R. and Meyer B. *Man, play, and games*. University of Illinois Press, 1961.

Caillois, R. "The Definition of Play, The Classification of Games," in *The Game Design Reader: A Rules of Play Anthology* (2006), pp.122-155 [1962]

Cavicchi, D. *Tramps like us: Music and meaning among Springsteen fans*. Oxford University Press, 1998.

Consalvo, M. and Nathan D. "Game analysis: Developing a methodological toolkit for the qualitative study of games," in *Game Studies* 6, no. 1 (2006), pp. 1-17.

Consalvo, M. "There is no magic circle," in *Games and culture* 4, no 4 (2009), pp. 408-417.

Consalvo, M. "Zelda 64 and Video Game Fans A Walkthrough of Games, Intertextuality, and Narrative." *Television and New Media* 4, no. 3 (2003), pp. 321-334.

Coppa, F. "Writing Bodies In Space: Media Fanfiction as Theatrical Performance," in *Fan Fiction and Fan Communities in the Age of the Internet* (2006), pp. 218-237.

Duffett, M. *Understanding fandom: An introduction to the study of media fan culture*. Bloomsbury Publishing USA, 2013.

Fernández-Vara, C. "Play's the Thing: A Framework to Study Videogames as Performance," in *Proceedings of the DiGRA International Conference: Breaking New Ground: Innovation in Games, Play, Practice and Theory* (2009). Available at <http://www.digra.org/wp-content/uploads/digital-library/09287.52457.pdf> (accessed Mar. 2017)

Fernández-Vara, C. "The Tribulations of Adventure Games: Integrating Story into Simulation Through Performance" PhD diss. Georgia Institute of Technology, 2009.

Figal, G. "Monstrous Media and Delusional Consumption in Kon Satoshi's Paranoia Agent," in *Mechademia* 5, no. 1 (2010), pp. 139-155.

Fiske, J. *Television Culture*. London: Methuen , 1987.

Fiske, J. *Reading the Popular*. Unwin Hyman, 1989a.

Fiske, J. *Understanding popular culture*. Routledge, 1989b.

Frissen, V. et al. "Homo ludens 2.0: Play, media, and identity," in *Playful Identities* (2015), pp. 9-50.

Fron, J. et al. "Playing dress-up: Costumes, roleplay and imagination." *Philosophy of Computer Games* (2007): 24-27.

Gn, J. "Queer simulation: The practice, performance and pleasure of cosplay," in *Continuum* 25, no. 4 (2011), pp.583-593.

Gray, J. "The news: you gotta love it," in *Fandom: Identities and communities in a mediated world* (2007), pp. 75-87.

Harrington, C. and Bielby D. *Soap fans: Pursuing pleasure and making meaning in everyday life*. Temple University Press, 2010.

Hills, M. *Fan cultures*. Psychology Press, 2002.

Hills, M. "Twilight fans represented in commercial paratexts and inter-fandoms: Resisting and repurposing negative fan stereotypes," in *Genre, Reception, and Adaptation in the Twilight Series* (2012), pp.113-131.

Holmquest, B. A. "Ludological Storytelling and Unique Narrative Experiences in Silent Hill Downpour." PhD diss., Bowling Green State University, 2013.

Huizinga, J. *Homo Ludens: A Study of the Play-element in Culture*. Beacon Press, 1955. [1938]

Jenkins, H. "Star Trek rerun, reread, rewritten: Fan writing as textual poaching," in *Critical Studies in Media Communication* 5, no. 2 (1988), pp. 85-107.

Jenkins, H. *Textual poachers: Television fans and participatory culture*. Routledge, 1992.

Jenkins, H. *Fans, Bloggers, and Gamers: Media Consumers in a Digital Age*. NYU press, 2006.

Jenkins, H. *Convergence culture: Where old and new media collide*. NYU press, 2008.

Jensen, J. "Fandom as pathology: The consequences of characterization," in *The adoring audience: Fan culture and popular media* (1992), pp. 9-29.

Jones, R. "From shooting monsters to shooting movies: Machinima and the transformative play of video game fan culture," in *Fan fiction and Fan Communities in the Age of the Internet* (2006), pp. 261-80.

Jones, S. E. *The meaning of video games: Gaming and textual strategies*. Routledge, 2008.

Lancaster, K. "When Spectators Become OPerformers: Contemporary Performance-Entertainments Meet the Needs of an 'Unsettled' Audience," in *Journal of Popular Culture* 30, no. 4 (1997), pp. 75-89.

Lancaster, K. *Interacting with Babylon 5*. University of Texas Press, 2001.

Lamerichs, N. "Stranger than fiction: Fan identity in cosplay," in *Transformative Works and Cultures* 7 (2010). Available at <http://journal.transformativeworks.org/index.php/twc/article/view/246/230> (accessed Jan. 2016)

Lamerichs, N. "Cosplay: Material and Transmedial Culture in Play," in *Proceedings of the DiGRA International Conference: DeFragging Game Studies* (2013). Available at http://homes.lmc.gatech.edu/~cpearce3/DiGRA13/papers/paper_276.pdf (accessed Jan. 2016)

Lamerichs, N. "Productive fandom: intermediality and affective reception in fan cultures." PhD diss., Maastricht University, 2014.

Lammes, S. "Approaching game-studies: towards a reflexive methodology of games as situated cultures," in *Proceedings of the DiGRA International Conference: Situated Play* (2007). Available at

<http://www.digra.org/wp-content/uploads/digital-library/07311.28016.pdf> (accessed Jan. 2016)

Lankoski, P. and Björk S.. *Game Research Methods: An Overview*. ETC Press, 2015.

Leonard, R. Von Neumann, Morgenstern, and the creation of game theory: From chess to social science, 1900-1960. Cambridge University Press, 2010.

Lessig L. *The Future of Ideas: The Fate of the Commons in a Connected World*. Random House, 2001.

Lessig L. "Remix: making art and commerce thrive in the hybrid economy." Penguin Press, 2008.

Lewis, L. *The adoring audience: Fan culture and popular media*. Psychology Press, 1992.

Mavridou, O. and Sloan R. "Playing outside the box: Transformative works and computer games as participatory culture," in *Participations: Journal of Audience and Reception Studies* 10, no. 2 (2013), pp. 246-259.

Mavridou, O. "The monstrous transformation of the self: translating Japanese cyberpunk and the posthuman into the living world," in *The Luminary* 6 (2015), pp.72-86.

Mäyrä, F. *An introduction to game studies*. Sage, 2008.

Mäyrä, F. "Getting into the game: doing multidisciplinary game studies." *The video game theory reader 2* (2009), pp. 313-329.

Mäyrä, F. et al. "Research methodology in gaming: An overview." *Simulation and Gaming* 43, no 3 (2012), pp. 295-299.

Namco (2004) *Katamari Damacy* [Playstation 2] Bandai Namco. Tokyo, Japan.

Neumann, J. and Morgenstern O. *Theory of games and economic behavior*. Princeton: Princeton University Press, 1944.

Newman, J. *Playing with videogames*. Routledge, 2008.

Ogg, K. "Lucid Dreams, False Awakenings: Figures of the Fan in Kon Satoshi," in *Mechademia* 5, no. 1 (2010), pp.157-174.

Ōtsuka, E. and Steinberg M. "World and variation: The reproduction and consumption of narrative," in *Mechademia* 5, no. 1 (2010), pp.99-116.

Pearce, C. "Productive play game culture from the bottom up," in *Games and Culture* 1, no. 1 (2006), pp. 17-24.

Raessens, J. "Playful identities, or the ludification of culture," in *Games and Culture* 1, no. 1 (2006), pp.52-57.

Salen, K. and Zimmerman E. *Rules of Play: Game design fundamentals*. MIT press, 2004.

Sandvoss, C. *Fans: The mirror of consumption*. Polity, 2005.

Sigmund, K. *Games of life: Explorations in ecology, evolution, and behaviour*. Oxford: Oxford University Press, 1993.

Sotamaa, O. (2005). "Have fun working with our product: Critical Perspectives on Computer Game Mod Competitions." Available at [http://www. gamesconference. org/diagra2005/viewabstract. php](http://www.gamesconference.org/diagra2005/viewabstract.php) (accessed Jan. 2016)

Sutton-Smith, B. "Play and ambiguity," in *The Game Design Reader: A Rules of Play Anthology* (2006), pp. 296-313.

Tamaki, S., *Beautiful Fighting Girl*. University of Minnesota Press, 2011.

Tushnet, R. "Copyright law, fan practices, and the rights of the author," in *Fandom: Identities and Communities in a Mediated World* (2007), pp. 60-71.

Tushnet, R. "Legal fictions: Copyright, fan fiction, and a new common law," in *Loyola LA Entertainment Law Journal* 17 (1996), pp. 651.

Vasquez, V. "What Pokémon can teach us about learning and literacy," in *Language Arts* (2003), pp. 118-125.

Vatra Games (2012) *Silent Hill Downpour* [Playstation 3, Xbox 360] Konami Digital Entertainment. Tokyo, Japan.

Winnicott, D. *The child, the family, and the outside world*. Da Capo Press, 1992.

Zimmerman, E. "Gaming literacy: Game design as a model for literacy in the twenty-first century," in *The video game theory reader 2* (2009), pp. 23-31.

Zubernis L. and Larsen K. *Fandom at the crossroads: Celebration, shame and fan/producer relationships*. Cambridge Schol

5.

A Review of Social Features in Social Network Games

Janne Paavilainen, Kati Alha, & Hannu Korhonen

Transactions of the Digital Games Research Association

2017, Vol. 3, No. 2, pp. 113-142

ISSN 2328-9422

<http://todigra.org>

TEXT: Licensed under Creative Commons Attribution (CC BY-NC-ND 2.5) <http://creativecommons.org/licenses/by-nc-nd/2.5/>

IMAGES: All images appearing in this work are property of the respective copyright owners, and are not released into the Creative Commons. The respective owners reserve all rights.

ABSTRACT

Although social network games on Facebook have become popular, their actual sociability has been questioned. In this paper, we review the social features of 16 social games and, as a result, present a list of 30 social features in three categories: presence, communication, and interaction. A common set of features, which was found in all of the examined games, is mainly focused on the presence and communication aspects, while

neglecting player interaction. In addition, social features are primarily used for acquisition and retention purposes, rather than monetization. These findings are useful for the study and design of social features in social games and in other games with social network integration.

Keywords

Facebook, game feature, review, sociability, social games, social networks, video games

INTRODUCTION

Social network games have become a popular pastime for Facebook users and are played by millions on a daily basis (Fields & Cotton, 2012). Based on the free-to-play revenue model and social network integration, these games can be acquired free of charge through the network where the games utilize a viral effect of the player's social network for playful purposes (Paavilainen et al., 2013). The player's social network also provides affordances for sociability, which has been acknowledged to have an important role in both games and play (Salen & Zimmerman, 2004). Researchers have identified the social component to be an important motivator for playing online games (e.g. Yee, 2006; Siitonen, 2007; Kallio et al., 2011).

Social games have caused controversy due to claims of not being "truly social" or being limited in their sociability (Consalvo, 2011; Paavilainen et al., 2013). Their status as games has even been questioned by game industry professionals (e.g. Brightman, 2012; Nutt, 2012). The term "social games" has been considered a misnomer due to the fact that all games are inherently social (Isbister, 2010, Stenros et al., 2011b). This industry-coined term is said to emphasize the social network platform rather than the games being particularly social. As the sociability of

social games has been questioned, it provides an interesting premise for a closer study.

In this paper, we review the social features of 16 social games. First, we present different views on the sociability of social games as discussed by the academia, the industry, and the players. Then we examine 16 social games and use an applied thematic analysis (Guest et al., 2012) to identify the social features in them. As sociability is one key motivator for playing online games, understanding the actual social features becomes important. Our comprehensive list of 30 social features provides practical examples for practitioners to use in their work.

The nature of our study is a qualitative explorative research, rooting itself in the field of game studies (Mäyrä, 2008). We focus on Facebook social games, as Facebook has become the most popular social network service in the western world and a majority of the discussion and research focuses on social games distributed and played there.

PERSPECTIVES ON SOCIABILITY IN SOCIAL GAMES

This section explores three perspectives on the sociability of social games: the academia, the industry and the players. The purpose of this section is to gain an understanding of how the sociability of social games has been perceived and discussed by the different stakeholders.

Academic Approach

The emphasis on single-player games during the digital game era has been an anomaly of sorts in the history of gaming, as games have already been social experiences for centuries (Salen & Zimmerman, 2004). Sociability is a natural part of games that feature two or more participants, and even single-player games have been argued to be social (Isbister, 2010; Stenros et al., 2011b; Christou et al., 2013).

According to Salen and Zimmerman (2004), “social” refers to player interaction, which happens on an internal and external level. The internal level emerges from the game’s rules, as in the social roles of the characters, while the external level derives from the pre-existing social relationships of the players, which can affect the game. Both levels of social relationships may be modified during the game, and is a way to achieve meaningful play. In social games, a game provides the internal level while the social network provides the external level through friend connections that are potential co-players.

O’Connor et al. (2015) have studied the applicability of three theoretical constructs of social relationships between massively multiplayer online (MMO) game players: psychological sense of community, social identity, and social support. The results indicate that these constructs are present in MMO games and they could determine the optimal game features to enhance positive connections with fellow players. It is possible that these constructs are applicable to social games, as well.

De Kort et al. (2008) have defined that the sociality of the play setting is dependent on the game’s social affordances and the players’ ability to monitor the other players’ actions and behavior by observing, acting, competing, co-operating, or co-acting, while creating opportunities for communication either verbally or non-verbally. Furthermore, Stenros et al. (2011b) have defined a framework for describing social interaction in social games. Sociability can be explored through the layers of presence, communication, and interaction. Each of these layers influences how the players perceive the sociability of a game.

Social presence can increase the players’ commitment to the online community, as the players are aware of other players (Friedl, 2003; Ducheneaut, 2006). Presence features can focus on individuals when we want to create a bond-based commitment or it can focus on teams, which would create an identity-based commitment (Farzan et al., 2010). Social presence has been a critical factor for the acceptance of a service

and promoting continuous usage (Shin & Shin, 2011). Presence is a prerequisite for sociability in any online game.

Communication between individuals is an essential part of sociability. In traditional multiplayer games, this usually means talking among players in the same space or through an in-game communication channel (Siitonen, 2006; Stenros et al., 2011b). Communication does not always have to be verbal, as noted by McEwan et al. (2012) who studied social interaction on a game site and noticed that there was very little verbal communication among players. Instead, game-based activities were considered a sufficient method of social interaction. Communication is the next step from social presence.

Multiplayer games are often considered to be more interesting and challenging than single-player games due to the player-to-player interaction (Friedl, 2003; Korhonen & Koivisto, 2007). Fullerton (2008) has categorized different player interaction patterns which enable interaction between the players: single-player vs. the game, player vs. player, multilateral competition, team competition, multiple individual players vs. the game, unilateral competition, and cooperative play. In the multiple individual players versus the game structure, numerous players are playing the game in the company of others, but actions are directed towards the game system and interaction between the players is limited. Multilateral competition means that there are three or more players and they can be either competing or collaborating through the game interaction affordances. Interaction is the third layer of sociability, extending from presence and communication.

Consalvo (2011) has studied multiple social games on Facebook, and according to her study, the most common social mechanics were a friend bar, gifting, visiting, competition/challenge, and communication. Consalvo concluded that social mechanics are quite limited in how they allow players to be social. Simple clicking of icons and the passive presence of friends in the friend bar or a one-line message may not allow the players to engage in deeper social interaction.

Gifting is a common reciprocal action in social games. Players send and receive gameplay items from each other. Reciprocity strengthens the social ties between the players, reminds them to come back to the game (retention), and also acts as a viral mechanism for spreading the game in the social network (acquisition). Reciprocity can also be problematic because it will create obligation between the players and ignoring a request can be taken as an impolite act (Losh, 2008; Stenros et al., 2011a; Paavilainen et al., 2013).

A player's social network, such as Facebook friends, can be utilized in many different ways in a game. Non-player characters may be named after the player's friends or the player can assign friends for different roles in the game space (Paavilainen et al., 2013). Social games can also require a number of friends for progressing in the game. At first, the player can play the game alone, but as the game advances the player becomes dependent on the help of others (Tyni et al., 2011). This can be problematic for those players who do not have enough playing friends (Losh, 2008; Paavilainen et al., 2013).

Typically, social games have not included in-game communication channels, but they utilize external channels such as Facebook chat. A common method is to post messages to the feeds of the players or their friends on the Facebook wall. Although messaging is important for acquisition and retention, research has shown that such messages can be considered spamming, which is not desirable sociability (Paavilainen et al., 2013; Paavilainen et al., 2015).

Industry Insights

Game designers have proposed various models (Järvinen, 2009; Ventrice, 2009) for understanding the design of social games, and sociability has been identified as a key aspect. Typically, sociability is discussed in relation to asynchronous gameplay, reciprocity, collaboration, and competition. Although sociability has been seen as an

important part of social games, the discussion has often focused on the shallow sociability of these games.

Game designer Greg Costikyan (2011) has stated that social games are unsocial. Costikyan considered many social games to be antisocial, as the main social interaction is to attack other players, or asocial, because the gameplay resembles that of solo-playing in an MMO game where other players are present but mostly irrelevant (see also Ducheneaut, 2006). Costikyan proposes features like teams, diplomacy, negotiated trade, and resource competition to create “actually social” games.

Costikyan’s views are also shared by others in the game industry. Indie game designer Jonathan Blow has even called social games evil, as instead of being social they are more about exploiting your friend list (Caldwell, 2011). According to Bogost (2010), friends in a social game are merely resources – not only for the players, but also for the developers for viral marketing purposes. Adding to that, Zynga’s former studio manager Matthew Wiggins stated that social games lack meaningful interaction and use social networks for viral marketing and spamming (Dredge, 2013).

The ability to play together in a shared physical space or concurrently has been seen as the fundamental aspect of a truly social game (Brightman, 2012; Radd, 2012). Thus, the lack of “real” sociability has been connected to asynchronous gameplay, which allows the players to play without all parties being present at the same time (Rose, 2011). Asynchronicity has been viewed as less valuable than synchronous interaction (Radd, 2012). However, game designer John Romero comments that asynchronicity can also be beneficial for sociability, as the players do not always have the opportunity to play together simultaneously (Grayson, 2012). For this reason, asynchronicity has earlier been proposed as the basis for casual multiplayer games (Bogost, 2004).

There is also an evolutionary perspective that better practices are picked up as social games evolve (Brightman, 2012; Nutt, 2012). Thus, the games would become more social (Radoff, 2011). This has been apparent in earlier game releases, which have been touted to be “more social” than their predecessors (EA, 2012; Tyni et al., 2011). In addition, the game industry is not completely unanimous about the lack of sociability in social games. Game designer and researcher Aki Järvinen (2010; 2011) takes the opposite stance by stating that there is sociability in social games – it is just the type that best fits the platform. Burdening players with too many social features would take something away from the accessibility and casual feel of social games.

The game design literature on social games is not very focused on sociability either. The social features are brought up mostly to make players more committed through reciprocity and thus enhance retention, or as a means for viral marketing (Fields & Cotton, 2012; Luton, 2013). In his Game Developers Conference presentation in 2011, game designer Raph Koster proposed 40 social game mechanics for social games. The presentation started with the introduction: “A lot of people have accused social games of not really being social.” (Koster, 2011)

The Players' Perspective

Hou (2011) has studied the uses and gratifications of social games. By surveying the players (N=93) of the Happy Farm social game, Hou reported that the expected gratifications of social game players include both social and game motives. The respondents played the game more frequently, spent more time in it, and got more engaged in the social interaction, which was a better predictor for game play variables than the diversion motive (e.g. relaxation, escape from stress, avoiding responsibilities).

Kim et al. (2013) presented the results of a pilot survey study (N=80) where the relationship between social games and sociability was studied. Both the sociability and the playability perspectives were critical to the

users' continuous use of the game and positive word-of-mouth behavior. The sociability factor was constructed from the "Social image" and "Maintaining interpersonal interconnectivity" and the formed "Subjective norm" variable was a better predictor of "Behavioral intention to use" than the attitude-related factor.

Wohn and Lee (2013) identified four social game play motivations in a survey study for Facebook game players (N=164). Two of these motivations were social: building common ground and reciprocity. They found that most players were not playing for social purposes, but the ones who did, devoted more energy on customizing their avatar, customizing their in-game space, publishing their game status on their Facebook wall, and were more inclined to spend real money than players with no social motivations.

The challenge with the aforementioned quantitative studies is that their sample sizes are relatively low. It also remains unknown how the games played by the survey respondents measure against the games analyzed in this study. For example, Chinese social games typically feature conflict mechanics such as stealing items, which are usually not present in western social games (Chen, 2009). Due to these factors, the generalizability of the results is questionable, but they do indicate that sociability has an important role in social games.

Wohn et al. (2011) concentrated on how social games influence the players' social relationships in an interview study with adult Facebook users (N=18). The participants perceived three outcomes of their social game use on their social relationships: maintaining, initiating, and enhancing relationships. They discovered that while the benefits inside of a game are typically the initial motivation to add friends, the relationships with these friends got stronger through playing the game.

Price & Wearn (2012) used participatory observation and interviews "to examine the gamers' view of friendship between players of both asynchronous (viral) and synchronous (social) Facebook social

networking games”. The study was focused on four Facebook games and included individual interviews (N=20), a group interview (N=6), and additional email interviews (N=3). The interviewees were from the western countries and Russia, and they were all female. The results suggest that social games with a higher interaction level have a better “sticky factor”, i.e. retention. The authors suggest that if developers wish to aim for better retention and decrease churn (the percentage of people who quit playing in a given period of time), they should add more social elements to these games.

Paavilainen et al. (2013) present an interview study (N=18) where Finnish Facebook users discussed how they perceive and play Facebook games. The study reports that the players acknowledge the social features in social games as an essential part of their game play, but the depth of sociability was considered rather low. Sociability can also be a burden, a nuisance, or a limiting factor. Assigning friends to certain roles in one’s game space might have been considered funny but was hardly seen as social, as usually the other player would not know about the feat. Although receiving gifts was nice, sending them was seen as a chore. Sociability could also be “a hellish annoyance” due to the massive reciprocal message spam from the game and the players. At the same time, Facebook notifications increase the knowledge of games played by trusted friends, thus eliciting curiosity towards those games. The social presence caters for competition, and a group of friends could make up for a poor game design. The feeling of playing for an audience was present, and social games were considered to be single-player games with a social twist.

Summary

Academia has mainly studied sociability in video games from a holistic perspective, with a tendency to focus on MMO games. A few researchers have addressed social games directly, as the domain is rather new. Sociability has been recognized as an important part of video games and it can have different roles depending on the game. Sociability in games

is formed through presence, communication, and interaction between the players.

The game industry has been actively discussing social games and their perceived lack of actual sociability. The tone of discussion has often been negative, even judgmental. Some comments reflect an evolutionary stance as social games are expected to “mature” and become more social in the future. Some designers consider that social games do not need deeper sociability as it would take away their casual feel.

Players consider sociability to be an important part of social games, though it might not be as essential as in MMO games, for example. Even shallow sociability can enhance the social ties between friends (and strangers), and social motivations can further motivate one to try new games (acquisition), keep interest in a game (retention), and even motivate one to buy gifts for other players with real money (monetization). On the other hand, force-feeding sociability can be an annoyance as well, causing frustration.

REVIEW OF SOCIAL FEATURES

This section presents the empirical study – the review of social features in 16 social games. First, the method is explained and then the results are presented.

Method

The empirical study is based on three researchers examining social features by playing social games and analyzing the results with an applied thematic analysis (Guest et al., 2012). The nature of this work is inductive as the list of social features was created based on the findings.

Three researchers played and examined 16 social games on Facebook and recorded their findings individually. The purpose was to identify the social features in the selected games. These social features could be 1)

game interface elements (Jørgensen, 2013) like a friend’s portrait in the game interface, 2) game mechanics (Holopainen, 2011) like sending a virtual item to a friend, 3) game design patterns (Björk & Holopainen, 2005) like collaborative actions or 4) affordances (Crenshaw & Nardi, 2016; Pinchbeck, 2009) like an in-game chat window or a clickable game-world avatar. As the researchers focused on the internal level of sociability (Salen & Zimmerman, 2004), the findings are objective and there is no researcher bias. These features either are or are not programmed into the game. External social features, like Facebook chat for example, would not count as a social feature as it is not an internal part of the game. The games (Table 1) were selected based on their popularity, novelty, or difference to each other to cover a wide spectrum of different kinds of social games from different genres.

Code	Game	Criteria	Launched	Publisher	Genre
A	Army Attack	P, N, D	2011	Digital Chocolate	Turn-based strategy
B	Bubble Witch Saga	P	2011	King	Bubble shooter
C	Candy Crush Saga	P	2012	King	Match-three puzzle
D	CastleVille	P	2011	Zynga	Builder simulation
E	Crazy Penguin Wars	N, D	2012	Digital Chocolate	Turn-based PvP combat
F	Game of Thrones Ascent	N, D	2013	Disruptor Beam	Fantasy RPG
G	Gangs of Boomtown	N	2012	Digital Chocolate	Western RPG
H	Hidden Chronicles	P	2012	Zynga	Hidden object
I	SongPop	P	2012	FreshPlanet	Music trivia
J	Yoga Retreat	D	2012	Gajatri Studios	Well-being simulation
K	War Commander	N, D	2011	KIXEYE	Real-time strategy
L	Dragon Academy	N	2013	Team Chaos	Match-three
M	League of Angels	N, D	2014	GT Arcade	Fantasy RPG
N	Dead Trigger 2	N, D	2013	Madfinger Games	First-person shooter
O	Marvel Avengers Alliance	N, D	2012	Playdom	Turn-based combat
P	Zynga Slots	P	2012	Zynga	Casino slots

Table 1: The selected social games for the analysis with the selection criteria; popularity (P), novelty (N), and difference (D).

The researchers had experience in expert review methods (e.g. Korhonen & Koivisto, 2006). They played each game until they were confident about their understanding of the game’s social features. This typically took from two days or two weeks up to a month, depending on the game. After the individual examinations were completed, the researchers discussed their findings with each other and combined their individual findings into a master list. Each finding was cross-checked between

different researchers and different games, and duplicate findings were removed. During this group analysis, the researchers played and examined the games together to validate the findings while utilizing the applied thematic analysis (Guest et al., 2012) method.

Thematic analysis is the most common form of analysis in qualitative research where the data and the findings are examined iteratively by the researchers and categorized into themes and codes. For our purposes, the reviewed social games represent the data that was analyzed and the themes and codes represent the categories of sociability (presence, communication, and interaction) and the identified social features. In games studies, the applied thematic analysis resembles “game playing as method” (Mäyrä, 2008) and the formal analysis of gameplay (Lankoski & Björk, 2015).

After the analysis and discussion, the features were organized into categories of presence, communication, and interaction. These layers of sociability have been identified in games studies (Consalvo, 2011; Stenros et al., 2011b) and in computer mediated communication, as well (Tu & McIsaac, 2002). Presence is the core feature of a multiplayer game as the knowledge of others affords further socializing with them. Communication is inherently based on presence and provides the necessary tools for communicating back and forth with either fixed messages or more versatile means. Interaction entails presence and communication, and adds direct player-to-player gameplay (inter)actions.

The Results

The researchers identified 30 different social features in three categories (presence 11 features, communication 9 features, interaction 10 features). These social features are summarized in Table 2 with their respective codes, categories, titles, and descriptions.

Code	Social feature	Description
PRE1	Activity information	The game informs the player about friends' actions in the game world.
PRE2	Community challenge	Community tournaments and other organized events in the game, which are accessible for the player.
PRE3	Automatic friend bonus	Automatic gameplay bonus based on the number of friends playing the game.
PRE4	Friend requirements	The player cannot complete a gameplay task without requesting her friend to do an action.
PRE5	Off-game sociability	In-game links to off-game social spaces such as discussion forums, wikis and Facebook fan pages.
PRE6	Presence information	Player receives information about the presence of other players in the game.
PRE7	Scorekeeping	Ranking and scorekeeping information, where the player can compare her status against others.
PRE8	Social user-interface element	Graphical user-interface elements, which have a social reference, such as player portraits, links, pop-up dialogs etc.
PRE9	Visit game space	The player can visit a friend's game space.
PRE10	Community progress indicator	An indicator representing community progress on a gameplay task.
PRE11	Relocate game space	Relocation of the player's own game space in the game world, to play in closer proximity with friends.
COM1	Asynchronous communication	An ability to communicate with others via asynchronous means (e.g. in-game message system, discussion board, or sign posts in game space).
COM2	Facebook wall post to a friend	Sending a wall post to a friend's Facebook wall from the game.
COM3	Facebook wall post to own wall and the news feed	Posting a message from the game on a player's own Facebook wall and the news feed.
COM4	Facebook notification	In-game activity that is presented as a Facebook notification for other players.
COM5	Invite request	Sending a request to a friend to join the game (also asking a friend to become a neighbor in some games).
COM6	Rematch/Replay	Requesting a rematch or replay from another player.
COM7	Request activity	Requesting an in-game gameplay action from a friend.
COM8	Request items	Requesting an item from a friend. Commonly known as a gift request.
COM9	Synchronous communication	An ability to communicate with others via synchronous means (e.g. chat).
INT1	Competitive action	Player vs. player gameplay action.
INT2	Facebook click post reward	Clicking a Facebook game post leads to an in-game reward.
INT3	Interaction reward	Interacting in a friend's game space leads to an in-game reward.
INT4	Receive items	Receiving items sent by friends. Commonly known as accepting gifts.
INT5	Remove friend	Removing a friend from in-game contacts/neighbors.
INT6	Send finite items	Sending an item to a friend. The sending player loses that item from her inventory.
INT7	Send in-app purchase items	Buying an item with premium currency in the game and sending the item to a friend.
INT8	Send infinite items	Sending an infinite item to a friend. Infinite items are free for the player and can be sent on a daily basis.
INT9	Synchronous interaction	Interacting simultaneously with a friend in the same game space.
INT10	Team formation	Forming a team or an alliance through in-game actions.

Table 2. The social features identified in the analysis.

Cross-checking each social feature in all of the analyzed games produced a matrix (Table 3), which shows how common each feature is and what the total number of features per game is. The social features were organized into four tier groups based on their frequency.

Code	Social feature	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Total	Tier
PRE5	Off-game sociability	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	16	1st
PRE6	Presence information	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	16	1st
PRE7	Scorekeeping	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	16	1st
PRE8	Social user-interface element	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	16	1st
COM3	FB wall post to own wall and the news feed	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	16	1st
COM4	Facebook notification	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	16	1st
COM5	Invite request	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	16	1st
INT4	Receive items	x	x	x	x	x	x	x	x		x	x	x	x		x	x	14	2nd
INT9	Send infinite items	x	x	x	x	x	x	x	x		x	x	x	x		x	x	14	2nd
PRE1	Activity information	x			x	x	x	x	x	x	x	x				x	x	12	2nd
COM8	Request items	x	x	x	x			x	x		x	x	x	x		x	x	12	2nd
PRE4	Friend requirements	x		x	x	x	x	x	x	x		x				x		11	2nd
PRE2	Community challenge	x			x	x	x		x		x		x	x	x	x		10	2nd
PRE9	Visit game space	x			x		x	x	x		x	x		x		x		9	3rd
COM2	Facebook wall post to a friend	x	x	x		x		x	x	x	x		x					9	3rd
INT1	Competitive action	x				x	x	x	x	x		x		x		x		9	3rd
COM7	Request activity	x					x	x	x	x						x	x	7	3rd
COM9	Synchronous communication					x	x					x		x	x		x	6	3rd
INT2	Facebook click post reward	x			x			x	x							x	x	6	3rd
INT3	Interaction reward	x			x		x	x			x					x		6	3rd
COM1	Asynchronous communication						x		x	x				x	x			5	4th
INT6	Remove friend	x			x	x								x		x		5	4th
INT10	Synchronous interaction					x						x		x		x		4	4th
PRE3	Friend bonus					x				x							x	3	4th
COM6	Rematch/Replay	x				x		x										3	4th
INT8	Send in-app purchase items		x	x								x						3	4th
PRE11	Relocate game space											x		x				2	4th
INT7	Send finite items	x											x					2	4th
INT11	Team formation						x								x			2	4th
PRE10	Community progress indicator															x		1	4th
Totals Per Game		22	12	13	16	19	19	20	18	15	15	18	14	19	11	20	16		

Table 3. The matrix of social features and the analyzed social games.

The most common social features were related to informing the player about her friends and their activities, and inviting non-playing friends

into the game. The games also provided information on the players' status and showed ranking for comparison. The activity information is presented both in the game interface as well as in the Facebook interface, out of the game. The games also had links to other social spaces outside of the game and Facebook. Basic reciprocity mechanics were present in the form of sending, receiving and requesting in-game (infinite) items. The games also featured mechanics where progression required a friend's activity in some form. This activity could have been anything from becoming a neighbor to sending a certain item, depending on the game. These findings further underline that sociability in the analyzed games is most often based on getting information about other players, inviting them into the game, comparing oneself to others, providing basic mechanics for reciprocity and utilizing game mechanics which require friends' activity for progression. The emphasis is on shallow sociability with passive presence, restricted communication and a lack of game play interaction.

Two of the puzzle games (games B and C), a classic "bubble shooter" and a "match-three" game, featured less social features than all the others. These games had almost identical social features with each other, except for the "Friend requirements", which was only found in game C. In these games, the focus of gameplay was more in the puzzle mechanic and single-player experience, hence sociability was mainly restricted to presence information and sending and receiving items (free moves and power-ups). This underlines that in certain social game genres, sociability is not emphasized. As a side note, both of these games featured in-app purchase items for gifting, which was not a common feature in other analyzed games. A similar feature was only identified in game K where the players could give out premium currency as a gift. In the aforementioned puzzle games, the buyable power-ups were a powerful aid to complete difficult levels, thus being good gifts for friends, and presumably a profitable business for the developers. In general, a majority of the social features are geared toward acquisition or retention purposes (notifications and requests for example), as only one

social feature (“Send in-app purchase items”) related to monetization was found.

Game N, a first-person shooter game, had the least social features implemented. The game has a strong narrative element and the player follows the story and completes missions. All social features are either from the presence or communication categories, indicating that the game focuses on a single-player experience in its gameplay.

Game A had more social features when compared to the others. This strategy game featured both player vs. environment and player vs. player action. There were many social features, making it socially more versatile than the others. For example, there were many different ways to help friends, and although the player vs. player game mode was not truly a conflict between players, as the friend’s units were controlled by artificial intelligence (AI), it gave the impression of playing against a friend. The option to brag about the result through a Facebook wall post enriched the social experience and rivalry.

Some game-specific social features were also revealed. These features were only found in a few games (three games or less) and the features can be considered to be heavily dependent on the game genre. Although they were not common, they provide interesting social twists to the gameplay.

For example, games A, E, and G featured the “Rematch/Replay” feature, which is connected to the player vs. player gameplay. When a player lost a match against another player, she could immediately call for a rematch or replay (the actual gameplay term was dependent on the game, e.g. “Vengeance”). In game E, which featured synchronous gameplay, the other player had to accept the call for rematch whereas in game A and G the call was automatically accepted, as the player vs. player gameplay was either a single action where statistics were compared for the win condition, or the other player’s units were controlled by the AI.

Another example was the “Relocate game space” feature found in games K and M. In these games, the players are originally positioned on one server, but it can be changed. To support sociability among playing friends, the players could relocate themselves closer to their friends on the same server, so they could play together on the same world map. This feature is strictly limited to certain kinds of games. For example, in games with no shared game space (games A, D, F, G, H, and J) this kind of a feature would be useless as there are no spatial relationships in the form of a world map, for example.

A third example is “Team formation”, which was found only in games F and M (the neighbor feature i.e. “Invite request” does not count here as “Team formation”). In game F, this feature was interwoven into the game narrative (which was based on a multi-format franchise) and the feature’s absence would have been a serious deficit in the game’s fantasy lore. In this game, players could also strengthen alliances with certain in-game actions. In game M, the players were able to create guilds or join existing ones, similar to traditional MMO games (see Siitonen, 2007).

The “Community progress indicator” feature was present only in game N. In this game, the players have a common goal to kill a certain number of zombies. Even though there is no interaction between the players, they can contribute to the objective and monitor when the goal is met in real time. This is an example of a specific kind of a presence feature, which relates to and could be useful in certain kinds of players vs. the environment games.

DISCUSSION

These results support the earlier views of social games being massively single-player games, as they mostly seem to feature the presence and communication aspects, but not much player-to-player interaction. When compared to MMO games, social games lack in real-time communication, interaction, and team forming, thus making them less

social in this sense. The social presence with restricted player-to-player interaction resembles the “alone together” phenomenon in MMO games (Ducheneaut, 2006).

However, there is a caveat here. We believe that labelling social games in general as either social or asocial is problematic for two reasons. First, there are many kinds of social games available and some genres emphasize sociability more than others. Second, even the simple games with less social features might be socially engaging due to a game mechanic that affords strong social engagement. Although there are a number of mutually common social features in the examined games, there are game-specific features which may have a great impact on the sociability of the game. The most common features (1st tier) were present in all the analyzed games, and thus these social features can be considered to be tried and true – the core of sociability in social games.

When considering the common social features of social games, the player-to-player interaction, as described by Friedl (2003) and Korhonen & Koivisto (2007), is usually missing. Looking at Fullerton’s (2008) player interaction patterns, social games seem to focus on one or two patterns within a game. Mostly the gameplay follows the multiple individual players vs. the game pattern, sometimes enriched by simple player vs. player patterns. Hence these games have been described as massively parallel single-player games (Järvinen, 2011), which seems to be a fitting term. Only two games featured team competition and a third afforded a multilateral gameplay pattern.

Consalvo (2011) identified a friend bar, gifting, visits, competition/challenge, and communication as the most common mechanics for social games. We present a more detailed list of social features including a friend bar (in the form of a “Social user-interface element”) and communication (in the form of a “Facebook wall post to the news feed or one’s own wall”, “Facebook notification”, and “Invite request”). These are the most common social features along with “Presence information”, “Scorekeeping”, and “Off-game sociability”. Gifting (in the form of

“Sending infinite items”, “Receiving items”, and “Requesting items”) was present in the 2nd tier, thus being considered common, but still not found in every analyzed game. Visits and competition/challenge were not identified as common, as they were 3rd tier features, thus being more genre dependent. Compared to Consalvo’s study, we provide a deeper analysis with newer games and the accuracy and the validity of the study is improved by utilizing several researchers while providing more detailed results in the form of a concrete list of identified social features.

Interestingly, the social features that are the most common in social games can also be the most hated. Spammy messages, requests, and notifications were considered to be major frustrations by social game players (Paavilainen et al., 2013). This was also found in a playability evaluation study (Paavilainen et al., 2015) where “spammy messages” was one of the domain-specific playability problems in social games. The “Friend requirements” feature, which was found in many games in this study, was also considered to lead to a poor experience in both of the aforementioned studies.

It might be that the game industry’s discussion on social games’ lack of sociability is narrow and biased towards the so called “Ville games” genre (Lewis et al., 2012), which feature world building and simple social features such as sending and receiving gifts and visiting a friend’s game space for score and bonuses. Such games have gained huge popularity in the past, so the discussion has also mostly revolved around them while ignoring other social game genres, which have evolved to offer deeper social experiences.

O’Connor et al. (2015) have studied MMO gamers and their social relationships. They concluded that the sense of community, social identity and social support are clearly visible among the players. In our study, we have identified several social features which probably result in similar experiences. For example, the “Visit game space” and “Activity information” features create a common ground for players and connect them in the game. Social identity can be presented by using the

“Facebook wall post to a friend” and “Scorekeeping” features. Social support is strongly present in social game features. “Request items” and “Send infinite items” are obvious choices, but there are also other features such as “Synchronous interaction” which enables interaction between the players. In the future, it would be interesting to study whether these social features contribute to the social relationship of the players, as suggested by O’Connor et al. (2015).

The design of social games is often related to the acquisition, retention, and monetization (Fields & Cotton, 2012) aspects due to their free-to-play revenue model (Paavilainen et al., 2013). Looking at the social features, only one feature (“Send in-app purchase items”) was directly related to monetization while the others were related to acquisition or retention purposes, or both, as there are social features where the distinction might be difficult to call.

To enhance the sociability in social games, designers should implement social features similar to MMO games, focusing on communication and interaction as well as team forming. Genre-specific aspects should be taken into consideration, as social engagement can be achieved with a “less is more” attitude without falling into a feature creep. Another approach is to offer a wide range of game-specific social features, which offer a selection of social affordances in a given situation. The 1st and 2nd (and even 3rd) tier social features offer the baseline to start with, while the genre provides the context for developing specific social features to enrich the social experience. There are already social games with versatile social features. Earlier it might have been easier to make clear distinctions between social games and MMO games, but as social games are evolving further, they are closing the gap and blurring the line between the two.

The contributions of this study are three-fold. First, we have provided detailed understanding on the sociability and the social features in social games through examining the discussion around them and analyzing their social features. The list of social features can be used to aid the

analysis of social games and it can be further expanded with new findings. Second, the identified social features can be used as heuristics to evaluate the sociability of social games – or any game with social network integration. Third, as this study shows the actual social features used in the design of social games, it also reveals what areas or features are neglected, thus acting as a source for innovation. Designing social features related to interaction and monetization could be beneficial for the developers. An earlier study shows that social gameplay is important for engagement and monetization for both desktop and mobile casual (social) games (Alsén et al, 2016). As Christou et al. (2013b) have called for methods and guidelines for designing and evaluating the sociability in online games, we believe our study is contributing to this call from the perspective of social games.

There are limitations in this study. First, the sample size of 16 games does not allow us to make bold generalizations across the domain. Second, there is the possibility that the researchers missed some features, although being thorough and experienced in analyzing games. Third, as social games are constantly updated, it might be that some features were added, removed, and changed during or after the study. In the future, it would be interesting to study which social features are important for the players. For such a study, the provided list of social features would be useful for survey or interview purposes.

CONCLUSION

This paper has discussed the sociability and social features of Facebook social games. Questioned by the game industry and sometimes even hated by the players, sociability has an interesting role in social games. By examining 16 social games we identified 30 social features which were organized into three categories: presence, communication, and interaction. The most common features were related to presence and communication, while actual player-to-player interaction was lacking. A majority of the features were focused on player acquisition or retention,

neglecting monetization. Social games cannot be deemed as social or asocial, as this is up to the individual game. Social games share a common set of social features, but there are many game-specific social features which can enhance the sociability of a game. These findings can be used by both academics and industry practitioners for the benefit of the study and design of social games – or other video games with social network integration.

BIBLIOGRAPHY

Alsén, A., Runge, J., Drachen, A., & Klapper, D. (2016). Play with me? Understanding and measuring the social aspect of casual gaming. Presentation in the First Workshop on Player Analytics in 12th AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment, 9th October 2016, San Fransisco, CA. USA.

Arrington, M. (2009). Scamville: The social gaming ecosystem of hell. Retrieved from <http://techcrunch.com/2009/10/31/scamville-the-social-gaming-ecosystem-of-hell/>

Björk, S. & Holopainen, J. (2005). Patterns in Game Design. Newton Center, MA: Charles River Media.

Bogost, I. (2004). Asynchronous Multiplay: Futures for Casual Multiplayer Experience. Other Players Conference on Multiplayer Phenomena, December 2004.

Bogost, I. (2010). Cow Clicker. The making of obsession [Blog post]. Retrieved from http://www.bogost.com/blog/cow_clicker_1.shtml

Brightman, J. (2012). Zynga: Social games are still not truly social. Retrieved from <http://www.gamesindustry.biz/articles/2012-04-11-zynga-social-games-are-still-not-truly-social>

Caldwell, B. (2011). Jonathan Blow interview: Do you believe social games are evil? “Yes. Absolutely.” Retrieved from <http://www.pcgamer.com/previews/jonathan-blow-interview-social-game-designers-goal-is-to-degrade-the-players-quality-of-life/>

Chen, M. (2009). Crop-stealing on Happy Farm: An addiction to affiliation. Retrieved from http://www.china.org.cn/china/2009-12/10/content_19044478.htm

Crenshaw, N., & Nardi, B. (2016). It was more than just a game, it was community: Social affordances in online games. In Proceedings of the 49th Hawaii International Conference on Systems Sciences. Retrieved from <https://www.computer.org/csdl/proceedings/hicss/2016/5670/00/5670d781.pdf>

Christou, G., Law, E., Geerts, D., Nacke, L., & Zaphiris, P. (2013a). Designing and evaluating sociability in online video games. In CHI’13 Extended Abstracts on Human Factors in Computing Systems.

Christou, G., Law, E., Zaphiris, P., & Ang, C. (2013b). Challenges of designing for sociability on enhance player experience in massively multi-player online role-playing games. *Behaviour & Information Technology*, 32(7), 724-734.

Consalvo, M. (2011). Using your friends: Social mechanics in social games. In Proceedings of Foundations of Digital Games, ACM Press 2011, 188–195.

Costikyan, G. (2011). Unsocial ‘Social’ Games. Retrieved from http://www.gamasutra.com/view/feature/134755/unsocial_social_games.php

de Kort, Y.A.W. & Ijsselstein, W.A. (2008). People, Places, and Play: Player Experience in a Socio-Spatial Context. *ACM Computers in Entertainment* 6(2).

Dredge, S. (2013). Ex-Zynga studio boss Matthew Wiggins on where social games went wrong. Retrieved from <http://www.theguardian.com/technology/appsblog/2013/jul/18/jiggerypokery-social-games-freemium-zynga>

Ducheneaut, N., Yee, N., Nickell, E., & Moore, R.J. (2006). 'Alone together?' exploring the social dynamics of massively multiplayer online games. ACM Conference on Human Factors in Computing Systems (CHI 2006), ACM Press 2006, 407–416.

EA (2012). SimCity Social breaks ground on Facebook [Press release]. Retrieved from <http://investor.ea.com/releasedetail.cfm?ReleaseID=679835>

Farzan, R., Dabbish, L., Kraut, R., & Postmes, T. (2010). Increasing commitment to online communities by designing for social presence. In Proceedings of Computer Supported Cooperative Work, CSCW, ACM Press 2010, 321–330.

Fields, T. & Cotton, B. (2012). Social game design. Monetization methods and mechanics. Waltham, MA: Morgan Kaufmann.

Fullerton, T. (2008). Game design workshop: A playcentric approach to creating innovative games (2nd Edition). Burlington, MA: Morgan Kaufmann.

Friedl, M. (2003). Online game interactivity theory. Hingham, MA: Charles River Media.

Grayson, N. (2012). Are social games really social? Games? Retrieved from <https://www.rockpapershotgun.com/2012/05/22/are-social-games-really-social-games/>

Guest, G., MacQueen, K.M., & Namey, E.E. (2012). Applied Thematic Analysis. Thousand Oaks, CA: SAGE.

Holopainen, J. (2011). Foundations of Gameplay (Doctoral dissertation). Blekinge Institute of Technology.

Hou, J. (2011). Uses and gratifications of social games: Blending social networking and game play. *First Monday* 16, 7. Retrieved from: <http://firstmonday.org/article/view/3517/3020>

Isbister, K. (2010). Enabling social play: A framework for design and evaluation. Chapter 2 in Bernhaupt R. (Ed.) *Evaluating user experience in games: Concepts and Methods*. London, UK: Springer, 11-22.

Järvinen, A. (2009). Game design for social networks: Interaction design for playful disposition. In *Proceedings of Sandbox'09*, ACM Press (2009), 95–102.

Järvinen, A. (2010). The state of social in social games. Retrieved from http://www.gamasutra.com/view/feature/134548/the_state_of_social_in_social_games.php

Järvinen, A. (2011). State of social in social games [Presentation]. Retrieved from <http://casualconnect.org/lectures/community-social/state-of-social-in-social-games/>

Jørgensen, K. (2013). *Gameworld Interfaces*. Cambridge, MA: MIT Press.

Kallio, K.P., Mäyrä, F., & Kaipainen, K. (2011). At least nine ways to play: approaching gamer mentalities. *Games & Culture* 6, 4, 327-353.

Kim, J., Chang, Y., & Myeong-Cheol, P. (2013). Why do people like to play social network games with their friends? A focus on sociability and playability. In *Proceedings of PACIS 2013*. Retrieved from <http://aisel.aisnet.org/pacis2013/78/>

Korhonen, H. & Koivisto, E.M.I. (2006). Playability Heuristics for Mobile Games. In *MobileHCI*, ACM Press, 9–16.

Korhonen, H. & Koivisto, E. M. I. (2007). Playability heuristics for mobile multi-player games. In Proceedings of the International Conference on Digital Interactive Media in Entertainment and Arts, DIMEA ACM Press, 28–35.

Koster, R. (2011). Social mechanics for social games. GDC 2011 [Presentation]. Retrieved from <http://www.gdcvault.com/play/1014555/Social-Mechanics-for-Social-Games>

Lankoski, P. & Björk, S. (2015). Formal Analysis of Gameplay. In P. Lankoski & S. Björk (Eds.) Game Research Methods: An Overview. ETC Press. Retrieved from <http://press.etc.cmu.edu/content/game-research-methods-overview>

Lewis, C., Wardrip-Fruin, N., & Whitehead, J. (2012). Motivational game design patterns of ‘Ville games. In Proceedings of Foundations of Digital Games (FDG 2012), Raleigh, NC.

Losh, E. (2008). In polite company: Rules of play in five Facebook games. In Proceedings of Advances in Computer Entertainment and Technology, ACE’08, ACM Press, 345–351.

Luton, W. (2013). Free-to-play: Making money from games you give away. New Riders.

McEwan G., Gutwin C., Mandryk R., & Nacke L. (2012). “I’m just here to play games:” Social dynamics and sociability in an online game site. In Proceedings of Computer Supported Cooperative Work, CSCW, ACM Press 2012, 549–558.

Mäyrä, F. (2008). An introduction to game studies: Games in culture. London, UK: Sage.

Nutt, C. (2012). Facebook: Social game devs must make their games actually social. Retrieved from <http://gamasutra.com/view/news/180310/>

Facebook_Social_game_devs_must_make_their_games_actually_social.php

O'Connor E.L., Longman H., White K.M., & Obst P.L. (2015). Sense of Community, Social Identity and Social Support among Players of Massively Multiplayer Online Games (MMOGs): A Qualitative Analysis, *Journal of Community & Applied Social Psychology*, 25, 6, 459-473.

Paavilainen, J., Alha, K., & Korhonen, H. (2015). Domain-specific playability problems in social network games. *Int. Journal of Arts and Technology*, 8, 4, Inderscience.

Paavilainen, J., Hamari, J., Stenros, J., & Kinnunen, J. (2013). Social Network Games: Players' Perspectives. *Simulation & Gaming* 44, 6, 794-820.

Pinchbeck, D. (2009). An affordance based model for gameplay. In *Proceedings of DiGRA 2009*.

Price, M.L. & Wearn, N. (2012). Viral or social friends? "I want to build relationships while playing a game. I want to meet real people." Retrieved from <http://eprints.staffs.ac.uk/1366/>

Radd, D. (2012). Idle Games says you can't have a social game without real-time play. Retrieved from <http://www.gamesindustry.biz/articles/2012-04-07-idle-minds-says-you-cant-have-a-social-game-without-real-time-play>

Radoff, J. (2011). Social games are evil (and other stupid memes) [Blog post]. Retrieved from <http://radoff.com/blog/2011/03/03/social-games-evil-stupid-memes/>

Rose, M. (2011). Braid's Blow: Social games are 'not very social'. Retrieved from http://www.gamasutra.com/view/news/123490/Braids_Blow_Social_Games_Are_Not_Very_Social.php#.UOhy6nfIVoM

Salen, K. & Zimmerman, E. (2004). *Rules of play. Game design fundamentals*. Cambridge, MA: MIT Press.

Shin, D.-H. & Shin Y.-J. (2011). Why do people play social network games. *Computers in Human Behavior* 27, 2, 852–861.

Siitonen, M. (2007). *Social Interaction in Online Multiplayer Communities (Doctoral dissertation)*. University of Jyväskylä.

Stenros, J., Paavilainen, J., & Kinnunen, J. (2011a). Giving Good 'Face': Playful Performances of Self in Facebook. In *Proceedings of Academic MindTrek (2011)*, ACM Press, 153-160.

Stenros, J., Paavilainen, J., & Mäyrä, F. (2011b). Social interaction in games. *International Journal of Arts and Technology* 4, 3, 342–358.

Tu, C.-H. & McIsaac, M. (2002). The Relationship of Social Presence and Interaction in Online Classes. *The American Journal of Distance Education* 16, 3, 131-150.

Tyni, H., Sotamaa, O., & Toivonen, S. (2011). Howdy pardner!: on free-to-play, sociability and rhythm design in FrontierVille. In *Proceedings of Academic MindTrek, (2011)*, ACM Press, 22–29.

Ventrice, T. (2009). Building the foundation of a social future. Retrieved from http://www.gamasutra.com/view/feature/4210/building_the_foundation_of_a_.php

Wohn, D.Y., Lampe, C., Wash, R., Ellison, N., & Vitak, J. (2011). "The "S" in Social Network Games: Initiating, Maintaining, and Enhancing Relationships," *System Sciences (HICSS)*, 2011 44th Hawaii International Conference

Wohn, D.Y., & Lee, Y-H. (2013). Players of Facebook games and how they play. *Entertainment Computing*, 4, 171–178

Yee, N. (2006). Motivations for Play in Online Games. *CyberPsychology & Behavior* 9, 6, 772- 775.

Zagal, J., Björk, S., & Lewis, C. (2013). Dark patterns in the design of games. In *Proceedings of the Foundation of Digital Games 2013* (pp. 39-46). Retrieved from: http://www.fdg2013.org/program/papers/paper06_zagal_etal.pdf

6.

Focus, Sensitivity, Judgement, Action

Four Lenses for Designing Morally Engaging Games

Malcolm Ryan, Dan Staines, & Paul Formosa

Transactions of the Digital Games Research Association

2017, Vol. 3, No. 2, pp. 143-173

ISSN 2328-9422

<http://todigra.org>

TEXT: Licensed under Creative Commons Attribution (CC BY-NC-ND 2.5) <http://creativecommons.org/licenses/by-nc-nd/2.5/>

IMAGES: All images appearing in this work are property of the respective copyright owners, and are not released into the Creative Commons. The respective owners reserve all rights.

ABSTRACT

Historically the focus of moral decision-making in games has been narrow, mostly confined to challenges of moral judgement (deciding right and wrong). In this paper, we look to moral psychology to get a broader view of the skills involved in ethical behaviour and how these skills can be employed in games. Following the Four Component Model of Rest and colleagues, we identify four “lenses” – perspectives for considering moral gameplay in terms of focus, sensitivity, judgement and action – and describe the design problems raised by each. To conclude, we analyse two recent games, *The Walking Dead* and *Papers*,

Please, and show how the lenses give us insight into important design differences between these games.

Keywords

game design, lenses, ethics, empathy, videogames, moral psychology, Four Component Model

INTRODUCTION

As video games have matured as a medium, there has been increasing interest among designers and academics alike in exploring morally complex themes (e.g. Sicart, 2009, Zagal, 2011, Zoss, 2010, Schrier, 2015)(Sicart 2009). Arts and media have a long history of wrestling with difficult moral problems, but video games present a unique opportunity – and unique challenges – for engaging an audience. By putting the player in control, we give them the chance to make hard moral choices themselves, rather than sit in judgement over the choices of a character in a story. This agency has the power to make moral problems much more personal, but presents a host of design problems in motivating players to engage morally with the work and in providing choices with depth and moral complexity.

While video games have in the past engaged with moral themes and issues, this has often been done in a fairly blunt and unsophisticated way, with scripted choices clearly labeled “good” and “evil” (Heron and Belford, 2014), and few long-term repercussions for either choice. Some recent games offer a more sophisticated approach to morality and there is a growing body of design theory supporting this change (e.g. Sicart, 2009, Belman and Flanagan, 2010), however the focus remains on a narrow subset of the array of skills comprising moral expertise. Morality is not just about deciding right and wrong; it is about developing an ethical identity, taking the perspectives of others,

planning how to implement moral decisions and acting with courage and persistence. We need to think more broadly about all aspects of moral behaviour and how they are engaged in play.

To achieve this, we turn to moral psychology and draw on the prominent Four Component Model of James Rest and colleagues (Rest et al., 1999). According to this model, moral expertise requires four core abilities: focus, sensitivity, judgement and action. Based on this work, we develop a series of “lenses”, in the manner of Schell (2014), which can be used to think critically about the various aspects of moral expertise that can be engaged by video games. In adopting this approach, we follow Schell’s philosophy of providing questions and provocations rather than prescriptive answers. Our aim is not to make all games moral, or for all moral games to fit a particular mould, but to enrich the discussion of moral play with new perspectives. Our lenses are intended as tools for designers and critics alike to more rigorously understand the player’s moral engagement with a game.

To demonstrate the value of these lenses, we analyse two recent games: *The Walking Dead* (Telltale Games, 2012) and *Papers, Please* (Pope, 2013). These analyses allow us to understand in detail the two different, but similarly successful, design approaches to building ethically engaging and complex video games. We show significant differences in approach across all four lenses, allowing a structured critique of the advantages and disadvantages of each.

BACKGROUND

Questions of morality are a pervasive topic for media and the arts. Morality is crucial to how human beings understand themselves as societies and individuals, and art – from Greek dramas all the way to modern television – has proven to be a particularly effective vehicle for its interrogation and transmission (Cain, 2005, Carr, 2005, Vaughn, 1990).

Games, however, have historically been viewed as amoral spaces. The concept of the “magic circle” (Huizinga, 1955) has been (mis)used to defend the idea that actions in a game should only be judged for their instrumental value in achieving the goals of the game, and not for the moral significance of the behaviour they depict (Koster, 2005, 84). This attitude leads to the design of games for what Sicart (2010) calls the reactive player, “a strategist concerned with directly interacting with a system regardless of the actual meaning of her actions.” This instrumental attitude toward play limits the expressive power of the medium. To reach beyond it, we need to learn how to encourage reflective players for whom “playing is understanding the values of the gameworld and developing an ethical persona” (Sicart, 2010).

Those games that have attempted to deal with ethical problems have often suffered defects that undermine the impact of their moral content (Sicart, 2009, 199, Heron and Belford, 2014, 42). Stevenson (2011, 37) notes that “while certain techniques are gradually beginning to gain support, it is safe to say that contemporary approaches to incorporating ethical ideas within digital games remain in a nascent phase”. Nevertheless, there is a long history of “ethically notable video games” – i.e. video games that “provide opportunities for encouraging ethical reasoning and reflection” (Zagal, 2011) – from early titles such as *Ultima IV: Quest of the Avatar* (Origin Systems, 1985) to more recent games such as *The Witcher 3* (CD Projekt Red, 2015), *This War of Mine* (11 bit studios, 2014), and *Spec Ops: The Line* (Yager Development, 2012).

Multiple frameworks exist for the classification, criticism, and design of ethically notable games, including Flanagan et al.’s Values at Play methodology (2007), Belman and Flanagan’s four principles of empathetically engaging game design (2010), Schrier’s EPIC framework (2015), and Sicart’s “ethical cognitive friction” approach (2010, 2013). Examining these and other approaches in depth is beyond the scope of this paper. We do not seek to disagree with any of them here, but rather to complement them with insights from moral psychology.

Moral psychology

Moral psychology is a blanket term encompassing “diverse literatures and fields of study” (Narvaez and Lapsley, 2009) that are concerned with providing an empirical account of moral functioning and development. For most of the twentieth century the field was dominated by the work of Lawrence Kohlberg, who argued that deliberate rational inquiry is the cornerstone of moral judgement and the engine of moral development (Kohlberg, 1981, 141, Kohlberg, Levine, and Hewer, 1983, 69). Subsequent research has since called Kohlberg’s approach into serious doubt (Lapsley and Narvaez, 2005b, Krebs and Denton, 2006, Vozzola, 2014), and currently there are a few promising alternatives vying to replace it as the discipline’s dominant paradigm. One of the more empirically and theoretically robust of the new alternatives is the so-called “Minnesota Approach” championed by James Rest and colleagues (Rest et al., 1999).

The cornerstone of the Minnesota Approach is the Four Component Model: a systematic breakdown of the cognitive and affective processes implicated in moral action (Rest, 1983). The Four Component Model is a descriptive account of what constitutes ethical expertise, rather than a normative account of what morality requires of us. Under the guidance of Narvaez and colleagues, the Four Component Model has developed into a blueprint for ethical expertise, comprised of four broad categories of cognitive/affective capabilities:

1. Moral Focus – the extent to which one is committed to one’s moral choices and the degree to which one prioritises moral concerns over others.
2. Moral Sensitivity – the ability to identify morality in the world, to understand the motivations of others, and to perceive the consequences of one’s behaviour.
3. Moral Judgement – the ability to understand moral concepts and to reason about moral issues.

4. Moral Action – the ability to overcome temptations and persist in the face of adversity. Doing the right thing even when it is hard. (Narvaez, 2006, 716)

Within each of these categories Narvaez and colleagues have identified sub-skills that can be targeted as part of moral expertise development. For example, one can enhance their moral sensitivity by routinely “taking the perspective of others”, whereas fostering moral action typically involves “taking initiative as a leader”, “resolving conflict”, and “communicating well” (Lapsley and Narvaez, 2005a, 156).

THE FOUR LENSES

In our view the Four Components and their associated sub-skills provide a valuable framework for the design of morally-engaging content in video games (Staines, 2010). As Sicart argues, designing ethical gameplay implies recognising and leveraging the player’s status as a moral agent who “will determine who they are in the game, and how that being is related to the being outside the game” (Sicart, 2009, 199). The Four Component Model provides designers with new avenues to engage and challenge the player as a moral agent.

To achieve this end, we provide four “lenses” below, one for each component, through which to consider the player’s ethical engagement with a game. These lenses are not intended as an exhaustive taxonomy of moral gameplay, a prescriptive model of what a moral game should be, or guidelines that all games must meet, but rather as a collection of perspectives to help inform design and criticism. In what follows, each lens will be described with examples, with a list of relevant questions to consider regarding the game in question, and with an outline of some of the design challenges it raises.

The Lens of Moral Focus

According to Blasi's (1980) influential account, acting morally involves more than simply making moral judgements: one must also take the (often scary) leap from thinking to doing. Moral focus is what makes such leaps possible. Individuals with a highly developed moral focus prioritise moral concerns above other concerns, and possess a strong moral self that drives them to "keep faith with identity defining moral commitments" (Narvaez and Lapsley, 2009, 43). Sub-skills associated with moral focus include acting responsibly, helping others, and cooperating. Moral crusaders like Abraham Lincoln and Susan B. Anthony are both exemplars of moral focus, as are highly spiritual individuals such as the Dalai Lama (Lies and Narvaez, 2001).

Examples: Spec Ops: The Line and Grand Theft Auto III

One effective method of harnessing moral focus is to have the player role-play identities with implicit (or explicit) moral commitments. *Spec Ops: The Line* (Yager Development, 2012) does this splendidly, placing players in the role of Martin Walker, a Delta Force commander. Unlike many third-person action heroes, Walker is keenly aware of his duties and responsibilities: to his squad-mates, to the people of post-catastrophe Dubai, to his values, and the values of the United States Marines. Prompted by Walker's reactions to and scrutiny of morally significant story events, the player is invited – at first implicitly, and then explicitly with loading screen messages – to reflect on their complicity in Walker's moral debasement, and their own enthusiasm for a game that depicts this. "We [the players] are responsible for what happens, not because we picked a moral choice within a game but because we simply didn't exercise our ultimate sanction – to halt the unpleasantness by revoking our participation" (Heron and Belford, 2014, 18).

Contrast this with *Grand Theft Auto III* (DMA Design, 2001), in which players take the role of a voiceless, personality-free protagonist named Claude. Claude is a career criminal on a bloody-minded quest to kill his traitorous ex-partner. Claude's moral vacuousness reflects the moral vacuum at the game's core, in which committing violent crime is fun, profitable, and largely free of negative consequences. Particularly egregious crimes – running down multiple pedestrians in broad daylight, attacking a police officer – attract the attention of law enforcement, but for skilled players this acts as a kind of reward: you can't have a thrilling police chase without the police. The player's actions often have grim implications for non-player characters (NPCs) in the narrative, but they are seldom shown in any detail or dwelt on after the fact. In these ways, the game says to its players: "In this world, morality is not a priority".¹

Design Challenges

Video games often encourage players to ignore the moral dimension of their in-game behaviour in favour of maximising ludic outcomes (Hartmann and Vorderer, 2010). This is in keeping with the view of games as essentially amoral spaces – so-called "magic circles" (Huizinga, 1955) where nothing is permanent and everything is permitted. Getting the player to break habits cultivated by previously playing numerous morally inert games is no easy task. The player must become "complicit" (Sicart, 2013) with the game's morality, making moral decisions for moral and not instrumental reasons. This is the foremost challenge for designers seeking to make morally engaging games. For moral content to be recognized and treated as moral content, designers need to encourage the player to take a reflective stance rather than take a purely reactive approach to play.

As such, "morality meters", which mechanically record a morality score for the player and add or remove points of "karma" for different in-game

1. This is by no means intended as a criticism of the game. *GTA III* is an enormously fun game because it is a moral vacuum.

acts, ought to be avoided when designing for moral focus. In addition to “desensitising the agent to their ethical thinking about the simulation ... [by] focusing it on the procedural layer” (Sicart, 2009), morality meters are a frequent source of frustration (Melenson, 2011), judging players in complete ignorance of their motives and the specific circumstances surrounding their decisions. For example, in *Fallout 3* (Bethesda Game Studios, 2007), “good” karma points are awarded for killing violent raiders and “bad” karma points for stealing medical supplies. But one can easily imagine scenarios in which the player might reasonably disagree with this – maybe the medical supplies are for treating a life-threatening injury and maybe the “violent raider” is asleep and unarmed. Scenarios like these are especially problematic in games where a morality meter is tied to ludic rewards such as experience points, treasure, or new abilities: not only is the player frustratingly misjudged by an “omniscient axis [and] transparent proxy for developer opinions” (Melenson, 2011, 67), they are denied progress and other rewards on the basis of said misjudgement. This incentivises players to conjecture about the developer’s moral judgements in order to maximise ludic outcomes rather than make their own moral decisions.

Fortunately, there are a number of “hooks” available to designers interested in appealing to the player’s moral focus. First and foremost the game must communicate to the player that morality matters in its own right in the game (Belman and Flanagan, 2010). This can be achieved with the fictional framing of the game: the setting, the role of the player, and the responses of other characters in the game. As we saw with *Spec Ops: The Line*, giving the player a strong moral identity to role-play is one of the more effective ways of facilitating moral focus. Roles in the real world – professional, social, familial – come with obligations and expectations, many of which the player will already be familiar with. In much the same way that educational content “sticks” better when it’s related to familiar real-world concepts (Gee, 2007), familiar roles, duties, and dilemmas can be leveraged to make moral situations more intelligible and impactful. For example, we know (or at least we should know) that soldiers aren’t allowed to shoot unarmed civilians, so we

don't need it explained to us why it's problematic for Walker – and by extension, the player – to do just that.

Non-player characters (NPCs) are another effective vector for communicating the importance of morality in the game to the player and encouraging its prioritisation. In contrast to the omniscient morality meter, NPCs provide “localised, individual ... assessments of the player's persona” (Melenson, 2011, 67) – assessments contextualised and invested with emotional resonance by their personalities and relationship with the player. This can be particularly effective in party-based RPGs where the player spends a great deal of time interacting with allied NPCs. Despite featuring a morality meter, *Star Wars: Knights of the Old Republic II* (Obsidian Entertainment, 2004) is an instructive example. Not only do companion NPCs – most notably the fallen Jedi, Kreia – provide a running and mostly unsolicited commentary on the player's behaviour, they also follow the player's example and can change quite radically over the course of the game. These changes are represented in three ways: in the position of the needle on the NPC's morality meter, in their appearance, and – most importantly – in how they talk and act. For players invested in the story, it can be quite shocking to observe changes in a favourite NPC's demeanour: a stark reminder that our behaviour affects others, even when we don't want it to.

Questions to Consider

- Why is morality a priority in the game? What motivates the player to treat moral decisions as moral decisions and not as instrumental decisions?
- Are players encouraged to role-play a moral identity in the game? If so, how does this impact how players perceive their own behaviour in the game?
- Are players given opportunities to reflect on their behaviour? How

is that reflection prompted?

- How are the consequences of moral choices represented? What does this say about the importance of morality in the game world? Are narrative and mechanical representations consistent in this respect?

The Lens of Moral Sensitivity

Exercising moral sensitivity involves making an “empathic interpretation of a situation” (Endicott, 2001, 7), identifying issues and stakeholders, and imagining possible responses and consequences. Experts in moral sensitivity “are better at quickly and accurately reading a moral situation and determining what role they might play” (Narvaez, 2006, 716) while at the same time exercising critical awareness of their own limitations and biases. Associated sub-skills include identifying emotions, perspective taking, working with interpersonal differences, and controlling bias (Endicott, 2001, 7). Moral innovators and social activists who perceive entrenched inequities are exemplars of moral sensitivity, as are highly empathic individuals.

Examples: Deus Ex and Mass Effect 2

In *Deus Ex* (Ion Storm, 2000), the player takes on the role of JC Denton, a cybernetically enhanced counter-terrorist operative working for the UN. Using JC’s rookie status as a framing device, the game encourages the player to reflect on the moral dimensions of the world around them by having JC’s superiors and co-workers routinely comment on his behaviour, drawing attention to its implications and consequences. Even very minor breaches of social decorum – such as using the wrong bathroom – prompt response and, in some cases, reprimand. However, these actions are rarely signaled as moral choices in advance. The player is challenged to recognise and respond to morally charged situations as they occur in real-time, in situ. One such situation occurs early in the

game when the player overhears a pimp menacing a prostitute in a seedy alleyway. There are no messages or prompts to provoke the player's intervention. In fact, the player need not intervene at all, and if they do, the nature and extent of their intervention is largely in their hands. Thus *Deus Ex* challenges the player, not only to spot morality "in the wild" during regular gameplay, but to generate responses to it as well.

Compare this to *Mass Effect 2* (BioWare, 2010) in which moral dilemmas are invariably quarantined to cut-scenes explicitly prompting player response. One of the unique features introduced in this game are so-called "interrupts" – mini quick-time events that occur during dialogue that give players an opportunity to take morally significant action, signaled by the icons shown in Figure 1.

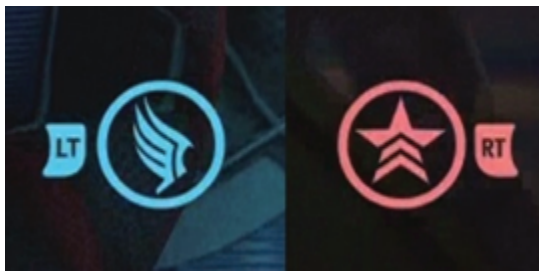


Figure 1: The Paragon and Renegade icons used by Mass Effect 2 to signal moral decision quick-time events.

If either of these icons appears during the course of regular dialogue, the player has a few seconds to press the corresponding button (in this case: left-trigger or right-trigger) to have the protagonist, Commander Shepard, perform an action. The type of action depends on the type of icon. The blue icon represents "Paragon" actions, which are generally compassionate and heroic; the red icon represents "Renegade" actions, which are generally ruthless, selfish, and insensitive. Before pressing the button, the player has no way of knowing what specific action Commander Shepard will take: only the type.

The “blink and you’ll miss it” nature of interrupts are intended, we suspect, to keep players on their toes and alert to the possibility of taking moral action during dialogue. However, because the player has no way of knowing (on the first try) what action Shepard will take when an interrupt is activated, responding to a prompt is more a matter of reflexes than moral perception. Similar to morality meters, by focusing the player’s attention on the “procedural layer” (Sicart, 2013, 198) of the decision – on clicking the button Simon-says style in almost total ignorance of what it involves – players are induced to treat interrupts as mechanical challenges in much the same vein as more traditional quick-time events. Further, by limiting morally significant action to cut-scenes, the game effectively gives the player permission to “switch-off” their moral sensitivity during the course of regular gameplay. Where *Deus Ex* says to the player “moral scenarios can happen anywhere at any time, so pay attention”, *Mass Effect 2* says “morality is here and nowhere else, so don’t bother looking”.

Design Challenges

Designing for moral sensitivity means striking a delicate balance between overtness and subtlety. If the player can’t “see” why a given scenario is morally significant, they’ll fail to treat it as such. Many games therefore clearly signpost moral scenarios with cut-scenes, dialogue, and aesthetic cues like colour-coded text to let players know they’re about to make a moral choice. There are obvious benefits to this approach, but the downside is that, by catering to the player so completely, it diminishes their incentive to exercise their own moral sensitivity skills. Conversely, games that don’t signpost moral scenarios run the risk of alienating players who don’t perceive the moral significance of their actions and feel “cheated” by the consequences.

One alternative is to avoid explicitly scripted “moral choices” and instead offer morally-loaded material choices, such as the option to stun or shoot the pimp in the *Deus Ex* example discussed above. These

actions employ the same mechanics as the rest of the game and it is the context that gives them moral meaning. It is up to the player to decide what the moral significance is. Done without care, however, this approach can leave the player unaware of the moral choice altogether.

Empathy – the ability to cognitively and emotionally place oneself in another’s shoes – is at the core of moral sensitivity. To engage the player’s empathy, we need to design characters that are relatable and recognisably human (Bandura, 2002, Belman and Flanagan, 2010). It is important not to inadvertently cue the player to “turn off” their morality and treat NPCs as outside their “scope of justice” (Hartmann and Vorderer, 2010, 98). One of the more common and overt ways this can occur is when “enemy” characters are depicted as unrepentantly evil or inhuman, and killing them is framed by the narrative as an act of just retribution (*ibid.*, 99). Other, subtler cues – such as rewarding kills with experience points – simply reinforce to the player that they are playing a game, and that NPCs are just tokens or pieces within that game.

Questions to Consider

- How is moral content presented to the player? Is it clearly signposted as moral content or are players expected to “see” morality themselves?
- How can players express their moral agency? Are they limited to selecting pre-generated options or is there scope for other kinds of morally significant action?
- How are NPCs presented? Do they have personalities and perspectives with which the player can empathise? Are there elements in the game that might cue the player to dehumanise other characters?

The Lens of Moral Judgement

Moral judgement describes one's ability to reason about morality and encompasses "basic cognitive skills that enable [one] to thoroughly and systematically complete the decision-making process" (Bock, 2001, 7). Associated sub-skills include the ability to use codes and identify judgement criteria, to reflect on process and outcome, and to plan how to implement decisions. Rigorous moral thinkers such as Immanuel Kant and Confucius are exemplars of moral judgement, as are certain conscientious members of the legal community, such as Supreme Court Justice Oliver Wendell Holmes (*ibid.*, 40).

Example: Fallout 3

The post-apocalyptic Fallout series of games are celebrated for their moral ambiguity and difficult moral choices (Schulzke, 2009). The Oasis quest in Fallout 3 (Bethesda Game Studios, 2007) is an excellent example of this. Isolated from the rest of the wasteland by a natural barricade of steep cliffs, Oasis is distinguished from the rest of Fallout 3's unique locations in that it is a lush natural paradise, not unlike a post-apocalyptic Garden of Eden. The reason for this miraculous fecundity is Harold: a sentient tree whose seeds spread vegetation wherever they land. Worshipped by the locals as a god, Harold has nevertheless come to despise the tedium of his immobile existence, and bluntly asks the player to end it for him in an act of compassionate euthanasia.

However, it is Harold's tree that has protected Oasis from the ravages that have affected the wider world. Killing Harold would destroy Oasis and harm the community of people who live there. If Harold is kept alive, his growth could be accelerated to spread his seeds further into the wasteland, or hampered to keep Oasis safely isolated from the rest of the world. Different members of the Oasis community argue for and against these alternatives. There is also a young girl, Sapling Yew, who has no agenda to push but merely tells the player of her affection for Harold,

who is her “bestest friend”. Choosing how to best act in this situation is a complex moral choice between the good of individuals, a community, and the wider world.

Design Challenges

The immediate problem in designing for moral judgement is creating morally complex decisions. The easiest decisions to design are moral temptations – choices with a clear right/wrong division but with a greater material reward for choosing the immoral option. Such choices involve little moral judgement; they are more concerned with the player’s moral focus and the priority they place on morality over personal gain.

In contrast, genuine moral dilemmas present multiple alternatives that all seem to be morally justified or required. The Four Component Model emphasises that moral reasoning involves integrating multiple ethical frameworks, from personal interest, to the simple codes of conduct attached to specific religious or professional roles, to wider societal norms and universal concepts such as the categorical imperative or Golden Rule. Dilemmas can be created both within a single framework and when different frameworks are in conflict, such as when a soldier’s duty to obey orders conflicts with a religious prohibition against murder or a personal ethic of mercy.

When ethical decisions are treated as isolated scenes disconnected from the wider narrative of the game, the player is discouraged from maintaining any consistent ethical framework. Choices can be made on an ad hoc basis, for reasons unrelated to morality. In the *Fallout 3* example above, the player can leave Oasis after making their decision and never think about it again. They are not invited to explain their decision, nor are they ever expected to repeat or improve their decision-making processes. To better challenge a player’s ethical judgement, a game should give the player opportunities to reflect, learn and improve, just as they would learn to improve other physical or intellectual skills.

Greater ethical continuity in a game can help to achieve this by providing a stronger moral theme to the work. Just as in an action game we might scaffold a series of increasingly difficult physical challenges, a series of thematically linked moral problems of varying complexity can examine a broader question from multiple perspectives and test the boundaries of the player's moral values.

Questions to Consider

- What kind of moral choices is the player asked to make? Are they moral dilemmas (right vs. right) or merely temptations (right vs. wrong)?
- What codes and ethical norms can players rely on to help them to make moral judgements? How are these represented and enforced? Do they ever conflict?
- How is the process of making a moral judgement represented? Are moral dilemmas and temptations one-time choices or part of a larger framework of objectives? Is the player invited to reflect on their reasoning?
- How difficult to understand and resolve are the moral dilemmas the player encounters? Consider using scaffolding to facilitate competence: start with a simple dilemma and revisit it in a variety of guises of increasing difficulty.

The Lens of Moral Action

Moral action is the ability to follow through and do what you judge is morally best, even in the face of adversity or temptation. Experts in moral action possess interpersonal skills such as “conflict resolution and negotiation, leadership, [and] assertiveness” as well as personal skills like perseverance, courage, and initiative (Narvaez et al., 2001, 8). Exemplars of moral action include courageous and committed activists

like Rosa Parks and Nelson Mandela, as well as expert communicators, negotiators, and problem solvers like Ghandi and Franklin D. Roosevelt.

Example: This War of Mine

This War of Mine (11 bit studios, 2014) is a war game with a difference. Rather than playing a soldier, as is often the case in games, the player is instead responsible for the lives of three or four civilians in a city under siege. Days are spent repairing and improving the shelled-out house in which the player's group takes shelter. At night one of the group is sent out to 'scavenge' – i.e. to visit neighbouring buildings and collect (or steal) food, materials and other supplies necessary for the continued survival of the group.

During these scavenging trips, the player may encounter other survivors and it is in these encounters that their morality is tested. For example, in an abandoned supermarket the player encounters a woman being harassed by a soldier. It is clear that the scene is likely to end in violence if the player does not intervene, but doing so also means putting their own character at risk. Rescuing the woman and surviving the encounter requires skillful play. Even if the player escapes unharmed, the night's scavenging is likely to be over and the player will have to return home empty-handed. This is not a simple abstract choice the player can make and then walk away from. It requires bravery to intervene, and the consequences affect the survivors' long-term prospects.

Another encounter in the game tests the player's resolve in a different way. At a decrepit squat a homeless man named Grisha begs the player for food. If the player has none, he will not complain; he will merely follow the player from room to room describing his sad tale. He puts up no resistance as the player ransacks his home, but his constant presence and sad demeanor tests the player's persistence and emotional resilience while committing a morally dubious act.

Design Challenges

The key to designing for moral action is to clearly distinguish choosing from doing. In games where moral agency is limited to selecting from dialogue or menu options, the distinction collapses: the player makes a choice and the action follows automatically without further intervention. Compare this to the supermarket scene above. Rescuing the woman is not simply a matter of choosing “rescue” from a dialogue tree: one must venture in and face the soldier personally. The player must work to implement their decision and face danger. This requires skill and bravery. A moral decision can be complicated by the fact that the player may simply not be skillful enough (physically, intellectually, socially) to put their choice into effect.

The size of the solution-space matters here. Giving the player more ways to solve moral problems by stringing together fine-grained actions provides more scope for them to exercise skill and creativity, rather than just picking a solution from a predetermined list. This can engender a greater sense of ownership in the solution.

When acting on a moral decision takes time and effort there is an opportunity to put the player’s resolve to the test. Danger, squeamishness, guilt, and other personal costs can tempt the player to reconsider their choice. On the other hand, sunk costs may encourage the player to persist if they think they’ve come too far to give up.

Questions to Consider

- Is a moral problem solved once a choice is made, or does the player have to put the choice into action?
- How difficult is it for players to put their choices into action? What skills are needed to do this?
- How big is the space of solutions? Is there room for the player to

be creative in solving moral problems? Or are they forced to choose from a predetermined list of options?

- Does moral action require persistence? If so, how is the player's resolve tested over time? Are there opportunities for the player to back out of their choice?

ANALYSIS

To illustrate the value of these lenses, we will use them to analyse two recent game titles, *The Walking Dead* and *Papers, Please*. Both of these games attempt to ethically engage players, but they use significantly different approaches to do so. Our lenses help us to develop a more detailed understanding of these games and highlight the features of each approach. However, we offer here only a partial analysis of these two games in order to illustrate our four lenses.

In offering this demonstration, we recognise that analysis and design are related but distinct activities. Lenses such as these are not simple patterns that can be applied to do design work for us. Rather they are reflective tools that allow us to understand and critique our own work and the work of others. For this reason, we hope our analysis shows its value to designers as well as critics.

The Walking Dead

The Walking Dead (henceforth TWD) is a graphic adventure game developed by Telltale Games. It tells the story of Lee Everett, a man with a murky past trying to survive in a near-future USA coming to terms with a zombie outbreak. Over a series of five episodes, Lee meets and sometimes joins forces with a collection of other survivors who have different approaches to staying alive. One constant companion throughout the game is an orphaned 8-year-old girl, Clementine, whom the player, as Lee, rescues early in the game. The resulting foster-parent/child relationship between Lee and Clementine is central to the work.

Unlike many adventure games, the focus of TWD is not on puzzle solving but on ethical decision-making and interpersonal relationships. While there are occasional action elements, the player spends the majority of their time in conversation with the other characters, resolving arguments and negotiating solutions to the survival problems that face the group. Mechanically, the game uses a standard “string of pearls” narrative structure with a number of branching dialogue “beats” strung together in an overall linear narrative (Schell, 2014, 298). Decisions affecting particular characters, however, may be remembered and can alter the player’s interaction with those characters in later beats, so to some extent the player’s decisions matter in the long term. While there are a few choices that can “lose” the game, the main impetus in the game is to tell a good story rather than to “win”.

Moral focus: It is this emphasis on story that engages the player’s moral focus. There are few “right” or “wrong” decisions in the game, and mostly it is left to the player to evaluate their decisions based on their personal morality (or a moral code they are choosing to role-play) along with the reactions of the characters around them. This is not to say that moral choices don’t have consequences, but rather that material outcomes are less important than moral outcomes. For example, a choice of whether or not to take supplies from an apparently abandoned car has no effect on the long-term survival of the group, but does affect the player’s relationships with other characters in the game, some of who will criticise the choice in ethical terms. In this way, the designers make it clear that moral decisions matter most in the game.

Of particular importance for this lens is the ongoing relationship between the player character, Lee, and the girl Clementine. As a replacement father figure, the player is often reminded that Clem is watching and learning from their example. This places the player in a position of moral responsibility and encourages them to consider their behaviour carefully.

Moral sensitivity: Most moral decisions in the game are presented as explicit choices in a dialogue tree (or, occasionally, as quick-time

events). In some cases, these choices are clearly signposted as moral decisions with characters arguing for them in terms of right and wrong. In other cases, the choice is presented as merely a material choice, and it is left to the player to be sensitive to its moral dimensions. For example, in the second episode the player is required to distribute limited food supplies among the members of the team. The game makes no particular arguments for the right or wrong ways to do this, but relationships with the characters make the decision morally charged.

Outside of these critical decision-making moments, the player is given opportunities to simply talk to other characters and get to know them. These moments are often not necessary for driving the plot, but they invite the player to build relationships that will later colour the choices they make. This is also an element of moral sensitivity: caring about others and understanding how they will be affected by our decisions. These non-critical interactions are important in fostering empathy.

Moral judgement: TWD exhibits a greater variety of moral decision types than many games of this nature. There are few direct moral temptations (choosing between a selfless ‘good’ option and a selfish ‘evil’ option) and more moral dilemmas with several arguably ‘good’ options. Temptation choices are more likely to be expressed in terms of benefiting other characters rather than benefiting the player themselves: the player’s choice is often between pleasing a character they like or a character they dislike, and this choice may be at odds with what they believe is right or wrong.

The choices in TWD follow a strong theme, pitting morality against survival in a world where the stakes are high and life-or-death choices are faced every day. The player must repeatedly choose how and when to place moral issues above survival, and how to police others who disagree. Honesty is also a strong moral theme, and Lee’s secret criminal past is often an issue. The same problem is often revisited from multiple angles, inviting deeper consideration of the commonalities and differences between each instance.

Moral action: Repetition of moral dilemmas invites the player to consider their moral behaviour as a whole rather than as disconnected choices. Maintaining a consistent moral stance is a matter of perseverance and courage; you cannot simply make a choice and walk away. Decisions continue to affect relationships between characters long after they are made, and it can require long-term work to repair divisions. The multiple-choice dialogue does not offer a lot of scope for subtlety, however, there is still some skill involved in choosing the right things to do or say to avoid upsetting particular characters, particularly when response times are limited. For example, one task in the third episode involves Lee trying to get Kenny, who is upset about his son and feeling guilty about his past actions, to stop a speeding train. The challenge is to do this without resorting to anger and violence by making a series of interconnected dialogue choices. This difficult task requires persistence, calmness, emotional intelligence, empathy, and conflict resolution skills. Without these advanced skills in moral action, you can't get Kenny to stop the train without using force. In some situations, there is also an option to remain silent when others are arguing, or choose not to act when a situation demands a time-critical response. This alternative adds some strategy to the player's choice, as they can choose to risk delaying their response to see how a situation unfolds before intervening, or choose not to act at all.

Papers, Please

Papers, Please (henceforth PP), by Lucas Pope (2013), explores the story of a nameless citizen assigned the role of customs inspector at the border of the fictional totalitarian regime of Arstotzka. As inspector, the player must process the documents of travellers, deciding who to admit and who to reject or detain. A commission is paid for each correctly processed traveller and this income must be spent to keep the inspector's family housed, warm, healthy, and fed. As days pass in the game, the rules for determining whether to admit or detain a traveller become more complex and often more draconian. It becomes clear that the player is

serving a corrupt and oppressive regime and moral questions arise about their own complicity in that regime. Opportunities arise to break the rules and assist travellers in need, but these must be weighed against the cost to the player and their family.

PP limits the player's ability to interact to only those actions that control the functions of the inspection booth: examining papers, detecting discrepancies and stamping passports. Some travellers talk about various things, but the Inspector's dialogue consists almost entirely of stock phrases, "Papers, Please", "What is the purpose of your trip?" etc. The player has no ability to control this dialogue; their agency is limited to operating the controls of the booth.

The game has a mostly linear narrative, with alternative endings allowing the player to side with the government, revolutionary forces, or to save their own skin (and possibly some family members) by stealing passports and fleeing to another country.

Moral focus: Being motivated to act morally is more problematic in PP than in TWD, and deliberately so. Ultimately the game is a reflection on the banality of evil (Arendt, 1965, Formosa, 2007), and it invites the player to be its instrument. Pope (personal communication, 7 February 2015) explains that he "wanted to show how even a good person, who cares about their family and others ... can be turned into uncaring cogs". Correctly processing papers, and thus making enough money to survive, is challenging and requires a lot of the player's attention. Sacrificing time to consider the ethical impact of your actions seems like a distraction, and a focus on practical problem solving prevents the player from seeing the ethical dimension of their choices.

And yet the world of PP is a world where ethics matters. Particular scripted encounters highlight the personal impact of the player's strict adherence to the rules: a husband and wife are separated, a wanted murderer is able to escape, a human-trafficker is free to terrorise vulnerable women. These moments make the player uneasily aware

of their moral responsibility, creating what Sicart describes as “ethical cognitive friction” (2010, 2013).

Moral sensitivity: PP leaves a lot of room for the player to discover the ethical import of their behaviour for themselves. Every decision is made using the same set of mechanical actions, rather than offering a particular set of morally loaded alternatives. It is left up to the player to realise that in some circumstances stamping a passport or operating a scanner may be a moral or immoral action (Formosa, Ryan and Staines, 2016).

Take for instance the X-ray scanner introduced into the game on Day 6. This is a new mechanic, added to the booth as the result of a terrorist incident and justified as a way to detect illegal weaponry and contraband. And indeed, the player can use it to detain travellers carrying concealed weapons, but it can also be used to check the sex of travellers whose facial features do not appear to match their sex as noted on their passport. The scanner produces a full-frontal nude image of the traveller with which the player can check their apparent genitalia. If these don’t match the passport information, the traveller can be denied entry or detained.

This is clearly morally problematic – it demonstrates creeping surveillance, gender discrimination and invasion of privacy – and yet the game makes no overt issue of it. It is merely another example of increasing state oppression and player complicity.

Moral judgement: Thematically, PP explores the tensions between obedience to authority, personal interest, responsibilities to one’s family, and the rights and needs of (often vulnerable) migrants. Decisions often have multiple sides: the need to support the player’s family, the needs of the travellers and the (sometimes valid, sometimes tyrannical) demands of the government. Decisions are complicated by connection; sacrificing income to show sympathy to one traveller may leave you too poor to help another or to feed your family, and ultimately the player’s position is morally invidious. Moral behaviour in the game is not simply a matter

of solving neatly packaged problems. Finding any fair and consistent policy, apart from blind obedience to the law, is strongly challenging.

Moral action: Even if the player knows the moral thing they want to do, the game makes it difficult to carry it out. First of all, morality is expensive in this game. The player needs to work hard to make enough income to be able to afford the opportunity to break the rules. On top of this, some moral problems call for their own kind of diligence. Keeping an eye out for certain travellers to stop or let through (in spite of their documents) adds a demand on the player's already divided attention. Overall the game shows that moral action is difficult; it is much easier if the player is willing to ignore the demands of their conscience.

CONCLUSION

Designing a morally engaging game is not simply a matter of scripting a series of moral temptations or dilemmas with multiple-choice outcomes. The player must first be convinced of the importance of taking a moral stance in the game and the game must take their moral choices seriously. The game must then provide the player with the means to play with moral sophistication – sensing, judging, prioritising and acting on moral problems in complex and challenging ways – and to increase their skill over time. While there are no easy solutions, we hope to have demonstrated that the four lenses provided in this paper can help designers to think rigorously through all the design elements needed to make games with moral depth.

BIBLIOGRAPHY

11 bit studios. 2014. *This War of Mine* [PC game]. 11 bit studios.

Arendt, H. 1965. *Eichmann in Jerusalem: A Report on the Banality of Evil*. New York: Penguin.

Bandura, A. 2002. "Selective Moral Disengagement in the Exercise of Moral Agency." *Journal of Moral Education* 31 (2):101-119.

Belman, J., and Flanagan, M. 2010. "Designing games to foster empathy." *International Journal of Cognitive Technology* 15 (1):5-15.

Bethesda Game Studios. 2007. *Fallout 3* [PC game]. Bethesda Softworks.

Bioware. 2010. *Mass Effect 2* [PC game]. Electronic Arts.

Blasi, A. 1980. "Bridging moral cognition and moral action: A critical review of the literature." *Psychological Bulletin* 88 (1):1-45.

Bock, T. 2001. *Ethical Judgement: Activity Booklet 1*. Edited by D. Narvaez, L. Endicott, T. Bock and C. Mitchell, *Nurturing Character in the Middle School Classroom*. Notre Dame, MI: The University of Minnesota.

Cain, A. 2005. "Books and becoming good: demonstrating Aristotle's theory of moral development in the act of reading." *Journal of Moral Education* 34 (2):171-183.

Carr, D. 2005. "On the contribution of literature and the arts to the educational cultivation of moral virtue, feeling and emotion." *Journal of Moral Education* 35 (3):319-333.

CD Projekt Red. 2015. *The Witcher 3* [PC game]. CD Projekt.

DMA Design. 2001. *Grand Theft Auto III* [PC game]. Rockstar Games.

Endicott, L. 2001. *Ethical Sensitivity: Activity Booklet 1*. Edited by D. Narvaez, L. Endicott, T. Bock and C. Mitchell, *Nurturing Character in the Middle School Classroom*. Notre Dame, MI: The University of Minnesota.

Flanagan, M., Nissenbaum, H., Belman, J., and Diamond, J. 2007. "A method for discovering values in digital games." *Situated Play, Proceedings of DiGRA 2007 Conference*.

Formosa, P. 2007. "Is radical evil banal? Is banal evil radical?" *Philosophy & Social Criticism* 33 (6):717-735.

Formosa, P., Ryan, M., & Staines, D. (2016). "Papers, Please and the systemic approach to engaging ethical expertise in videogames." *Ethics and Information Technology* 18 (3):211-225.

Gee, J.P. 2007. *What Video Games have to Teach Us about Learning and Literacy*. New York, NY: Palgrave Macmillan.

Hartmann, T., and Vorderer, P. 2010. "It's Okay to Shoot a Character: Moral Disengagement in Violent Video Games." *Journal of Communication* 60 (1):94-119.

Heron, M., and Belford, P. 2014. "Do You Feel Like a Hero Yet? Externalised Morality in Video Games." *Journal of Games Criticism* 1 (2):1-22.

Huizinga, J. 1955. *Homo ludens: A study of the play-element in culture*. London: Routledge.

Ion Storm. 2000. *Deus Ex* [PC game]. Eidos Interactive.

Kohlberg, L. 1981. *Essays on moral development: Vol. 1 – The philosophy of moral development: Moral stages and the idea of justice*. San Francisco: Harper & Row.

Kohlberg, L., Levine, C., and Hewer, A. 1983. *Moral stages: A current formulation and a response to critics*. Basel: Karger.

Koster, R. 2005. *A Theory of Fun for Game Design*. Scottsdale, Arizona: Paraglyph Press.

Krebs, D., and Denton, K. 2006. "Explanatory limitations of cognitive-developmental approaches to morality." *Psychological Review* 113 (3):672-675.

Lapsley, D., and Narvaez, D. 2005a. "The psychological foundations of everyday morality and moral expertise." In *Character Psychology and Character Education*, edited by D. Lapsley and C. Power, 140-165. Notre Dame, IN: University of Notre Dame Press.

Lapsley, D., and Narvaez, D. 2005b. "Moral psychology at the crossroads." In *Character Psychology and Character Education*, edited by D. Lapsley and C. Power, 18-35. Notre Dame, IN: University of Notre Dame Press.

Lies, J., and Narvaez, D. 2001. *Ethical Motivation: Activity Booklet 3*. Edited by D. Narvaez, L. Endicott, T. Bock and C. Mitchell, *Nurturing Character in the Middle School Classroom*. Notre Dame, MI: The University of Minnesota.

Melenson, J. 2011. "The Axis of Good and Evil." In *Designing Games for Ethics: Models, Techniques, and Frameworks*, edited by K. Schrier and D. Gibson, 57-71. Hershey, PA: IGI Global.

Narvaez, D. 2006. "Integrative Ethical Education." In *Handbook of Moral Development*, edited by M. Killen and J. Smetana, 703-732. Mahwah, NJ: Lawrence Erlbaum Associates.

Narvaez, D., and Lapsley, D. 2009. Triune ethics theory and moral personality. In *Personality, Identity and Character: Explorations in Moral Psychology*, edited by D. Narvaez and D. Lapsley, 136-158. New York, NY: Cambridge University Press.

Narvaez, D., Schiller, R., Gardner, J., and Staples, L. 2001. *Ethical Action: Activity Booklet 4*. Edited by D. Narvaez, L. Endicott, T. Bock and C. Mitchell, *Nurturing Character in the Middle School Classroom*. Notre Dame, MI: The University of Minnesota.

Obsidian Entertainment. 2004. *Star Wars Knights of the Old Republic II: The Sith Lords* [PC game]. LucasArts.

Origin Systems. 1985. *Ultima IV: Quest of the Avatar* [Apple II game]. Origin Systems.

Pope, Lucas. 2013. *Papers, Please* [PC game]. 3909.

Rest, J. 1983. "Morality." In *Handbook of child psychology: Vol 3. Social, emotional, and personality development*, edited by J. Flavell and E. Markham, 556-629. Hillsdale, NJ: Lawrence Erlbaum Associates.

Rest, J., Narvaez, D., Bebeau, M., and Thoma, S. 1999. *Postconventional moral thinking: A Neo-Kohlbergian Approach*. Mahwah, NJ: Lawrence Erlbaum Associates.

Schell, J. 2014. *The Art of Game Design: A book of Lenses*. Boca Raton, Florida: CRC Press.

Schrier, K. 2015. "EPIC: a framework for using video games in ethics education." *Journal of Moral Education* 44 (4):33.

Schulzke, M. 2009. "Moral Decision Making in *Fallout*." *Game Studies: The International Journal of Computer Game Research* 9 (2).

Sicart, M. 2009. "The banality of simulated evil: designing ethical gameplay." *Ethics and Information Technology* 1 (3):191-202.

Sicart, M. 2010. "Values between systems: Designing ethical gameplay." In *Ethics and Game Design: Teaching Values through Play*, edited by K. Schrier, 1-15. Hershey, PA: IGI Global.

Sicart, M. 2013. *Beyond Choices: The design of ethical gameplay*. Cambridge, MA: MIT Press.

Staines, D. 2010. "Video games and moral pedagogy; A neo-Kohlbergian approach." In *Ethics and Game Design: Teaching Values through Play*, edited by K. Schrier, 35-51. Hershey, PA: IGI Global.

Stevenson, J. 2011. "A framework for classification and criticism of ethical games." In *Designing Games for Ethics: Models, Techniques, and Frameworks*, edited by K. Schrier and D. Gibson, 36-55. Hershey, PA: IGI Global.

Telltale Games. 2012. *The Walking Dead* [PC game]. Telltale Games.

Vaughn, S. 1990. "Morality and entertainment: The origins of the motion-picture production code." *The Journal of American History* 77 (1):39-65.

Vozzola, E. 2014. *Moral development: Theory and applications*. New York: Routledge.

Yager Development. 2012. *Spec Ops: The Line* [PC game]. 2K Games.

Zagal, J. 2011. "Ethical reasoning and reflection as supported by single-player videogames." In *Designing Games for Ethics: Models, Techniques, and Frameworks*, edited by K. Schrier and D. Gibson, 19-35. Hershey, PA: IGI Global.

Zoss, M. 2010. "Ethics 101: Designing Morality in Games." UBM Tech, accessed Jan 2015. http://www.gamasutra.com/view/feature/133712/ethics_101_designing_morality_in_.php.

7.

Developing Ideation Cards for Mixed Reality Game Design

Richard Wetzel, Tom Rodden, & Steve Benford

Transactions of the Digital Games Research Association

2017, Vol. 3, No. 2, pp. 175-211

ISSN 2328-9422

<http://todigra.org>

TEXT: Licensed under Creative Commons Attribution (CC BY-NC-ND 2.5) <http://creativecommons.org/licenses/by-nc-nd/2.5/>

IMAGES: All images appearing in this work are property of the respective copyright owners, and are not released into the Creative Commons. The respective owners reserve all rights.

ABSTRACT

Mixed reality games (MRGs) encompass a variety of gaming genres such as pervasive games, location-based games, and augmented reality games. They enrich the physical world with technology to create new and exciting possibilities for games – but at the same time introduce new challenges. In order to make the vast design space of MRGs easily accessible we have developed our *Mixed Reality Game Cards*. These

are a deck of ideation cards that synthesize design knowledge about MRGs and enable collaborative design in a playful manner. In this paper, we describe the iterative development of the *Mixed Reality Game Cards* over the course of six studies. The final version of the cards constitutes a helpful tool for future designers of MRGs both for rapid idea generation as well as for more in-depth idea development. We achieve this by utilizing different types of domain-specific cards (*Opportunities*, *Questions*, *Challenges*) as well as promoting the inclusion of domain-extrinsic *Theme cards* and suggesting different rules for interacting with the cards.

Keywords

ideation cards, game design, mixed reality games, pervasive games, location-based games

Introduction

Mixed reality games (MRGs) differ from traditional videogames by combining digital elements with the real world environment. Smartphones equipped with GPS or NFC provide new forms of interactions. MRGs are often played outdoors and turn the players into their own avatars – interacting with the game world by walking or running and engaging with real world locations or objects. They include (or overlap with) other similar categories of games like location-based games, pervasive games, or augmented reality games. *GeoCaching* (O’Hara, 2008), *Ingress* (Niantic Labs, 2012), and *Pokémon Go* (Niantic Labs, 2016) are perhaps the three MRGs with the largest player-base. Less well-known to the general public but arguably more innovative and daring examples have been created by researchers and artists, e.g. *Can You See Me Now?* (Benford et al., 2006), *REXplorer* (Ballagas et al., 2008) or *Feeding Yoshi* (Bell et al., 2006).

As a relatively new form of gaming, the reflection about, and analysis of, MRGs is still mostly limited to academic publications, e.g. (Montola et al., 2009) or (Davidsson et al., 2004). Designing such games however is not only difficult because of the rich design space MRGs offer, but also because these games raise significant new challenges. Digital content and game play needs to be embedded into real-world settings. Local conditions such as weather or traffic have to be taken into account. Spectators or bystanders might interfere or influence the game. Technologies like GPS and mobile data connectivity are unreliable and often imprecise or faulty. Other recurring themes that are relevant for MRG design include seamfulness (Chalmers and Galani, 2004), city-wide performances (Benford et al., 2004), emergent behavior (Lund et al., 2010), or in-situ authoring (Weal et al., 2006).

Furthermore, MRGs are also often developed as part of interdisciplinary teams. Technology experts might know the ins and outs of how to utilize sensors. Game designers combine mechanics to create the gameplay experience. Content or location experts provide the necessary context for shaping a game around a specific place and can contribute atmosphere and theme. However, these parties do not necessarily have the same interpretation of the design space or may even be severely limited in their knowledge.

Having come across these issues repeatedly during the course of our previous research activities, we decided to tackle this problem in order to level the playing field between different stakeholders and generally make existing design knowledge easily accessible. For this, we decided to develop a deck of ideation cards specific for mixed reality games. Ideation cards have been used successfully in a wide variety of domains including game design. They foster playful and collaborative design activities, qualities that distinguish them from other collections of design knowledge such as design patterns or guidelines.

Our *Mixed Reality Game Cards* are a deck of 93 ideation cards that encapsulate the design space of mixed reality games. The cards utilize

rules and formats that are inspired by other ideation card decks and combine two different approaches to support initial idea generation as well as more in-depth idea development. In this paper, we describe the iterative design process of creating these cards over the course of six studies leading to the final version of the cards. Our evaluations furthermore allow us to not only reflect on our own deck of ideation cards but also to provide valuable insight for the design of ideation cards in general. Our deck makes use of different types of domain-specific cards (*Opportunities, Questions, Challenges*) and combines these with domain-extrinsic *Theme cards* as further sources of inspiration. In addition, two rules variants for interacting with the cards are discussed that change the flow and agency of a design session giving participants a choice of which card to play or fully randomizing this aspect.

Ideation Cards

The physical properties of ideation cards make them resemble card games, and they can be classified as design games (Brandt and Messeter, 2004) (Halskov and Dalsgaard, 2006). Ideation cards possess game-like rules ranging from the way they structure card draws, turn-taking, playing and discarding cards to randomly revealing them. They enable collaborative design in a playful atmosphere. Cards are used as orienting devices, conversation starters, and pace-makers (Hornecker, 2010).

By now ideation cards are a viable design method utilized by professional designers. The *IDEO Method Cards* (IDEO, 2002) are a collection of design methods that can be used as part of a design process. The *IDEO Method Cards* are context agnostic – they are not created to help with a specific topic but provide tools for any design scenario. *Method Kit* (Möller, 2012) on the other hand is not a single card deck but a collection of specific decks that cover different topics and provide themes and concepts for structuring brainstorming sessions. These two ideation decks have one interesting commonality: The cards are used as a conversation starter around a specific topic. They do not themselves

become an element of the design. In that regard they are similar to the *Deck of Lenses* (Schell, 2008). The author describes 113 lenses to look through when designing a game. These lenses have been translated into a deck of ideation cards. Each card (lens) asks questions of the designer and encourages thinking about different and important aspects of their design in order for them to gain a better understanding of it. This is very similar to the approach the *Exertion Cards* are following (Mueller et al., 2014). Each card contains a thought-provoking suggestion and covers different elements that are crucial for exergames. When looking at these cards we can argue that they might be better suited for designers that already have a preconceived idea – their main goal is not to support the initial generation of an idea. Instead they take a more reflective approach and put a stronger emphasis on in-depth developing of an idea.

A good example of a deck that supports idea generation are *PLEX Cards* (Lucero and Arrasvuori, 2010). This deck consists of 22 cards that help users to create playful experiences. Each card describes a concept, e.g. *nurture*, *fantasy*, *sensation*, *submission*, *thrill*, or *discovery*. In *PLEX Brainstorming* a card is randomly selected while each of the two designers draws three cards. One designer starts exploring an idea based on the first card. The second designer can then choose one of their cards and extend the idea that way. Finally, the first designer does the same to finalize the idea. In *PLEX Scenario* designers draw three random cards and assign them as *beginning*, *continuation*, and *the end*, developing an idea based on these cards while doing so.

VNA cards (Kultima et al., 2008) are another example for a card-based design game. Similar to *PLEX*, they are used to create initial game design ideas. The *VNA* cards consist of three different categories that give the deck its name: red *verbs*, blue *nouns* and orange *adjectives*. Each of these cards contains exactly one word. *Verbs* can be *design*, *bounce*, *grow*, *devote*, *write*, or *fill*. *Nouns* include *keys*, *fugitive*, *creature*, *estate*, *frosting*, or *flower*. Examples for *adjectives* are *empty*, *quite*, *steely*, *musical*, *rolling*, or *high*. The whole deck consists of 240 cards with 80 cards for each category. In order to use *VNA*, the first designer draws a

random *verb* and describes how this could be a basic idea for a game. The next person draws a *noun* and tries to extend the existing idea. This is repeated a third time: an *adjective* is used to finalize the game idea. This way VNA is used to rapidly generate several ideas for games that can then be further developed at a later stage.

As a final example, we can look at the *Sound Design in Games Deck* (Alves and Roque, 2011). These cards are based on a design pattern language that takes the role that sound, audio, and music play in video games (Alves and Roque, 2010). Unlike most of the aforementioned decks, the cards provide rich information on both front and back of the cards, and also point out connections between cards (as is typical for a design pattern language).

Comparing the above-mentioned decks of cards, we can conclude that while their overall goal is largely identical (supporting the design process), each deck approaches it in a different way. Examples for distinguishing elements are the amount of content, the specificity of the content, the rules for interacting with the cards, and whether the cards are more aimed at creating an initial idea or want to help explore a perhaps already-existing idea. Our research focus therefore became how to best adapt these established best practices as part of our own deck. To this end we identified the following goals for our *Mixed Reality Game Cards*:

- Encapsulate domain-specific design knowledge
- Foster collaboration between (multidisciplinary) teams of designers
- Avoid overwhelming (inexperienced) designers
- Avoid making (experienced) designers feel restricted
- Support initial (and rapid) generation of ideas
- Support more in-depth development of ideas

Mixed Reality Game Cards

We developed the *Mixed Reality Game Cards* iteratively over the course of several studies. Our cards consist of three rather distinct types of cards: *Opportunities*, *Questions*, and *Challenges*. Each type has a specific function in the overall ideation process. Such a division is unusual for ideation cards – in the related work section we have seen that all other ideation cards use the same type of card. We introduced these different types to combine two different and common usages for ideation cards: creation of an initial idea (e.g. *VNA*, *PLEX*) or reflection on an idea (e.g. *Deck of Lenses*, *Exertion Cards*).

Opportunity cards describe a single concept, mechanic, or element of a mixed reality game. In an ideation session, these cards can be selected and combined to create a game design idea. They are the building blocks that describe a game. *Question cards* require users to answer questions in order to further define their game design idea. After an initial game design idea has been conceived they then help users to turn their (potentially) still-rough ideas into more concrete ones. Some of them are generic and could be relevant for any type of game, while others are specifically important for mixed reality games. *Challenge cards* are the third type of card. These describe common issues and pitfalls that can negatively affect mixed reality games. Users are encouraged to “proof” their game design ideas against these cards to see if any of the described problems might occur, and if so, how they could be prevented. The full deck of cards consists of 51 *Opportunities*, 18 *Questions*, and 24 *Challenges* (93 cards in total). Example cards can be seen in Figure 1 whereas Table 1 gives an overview of all cards.

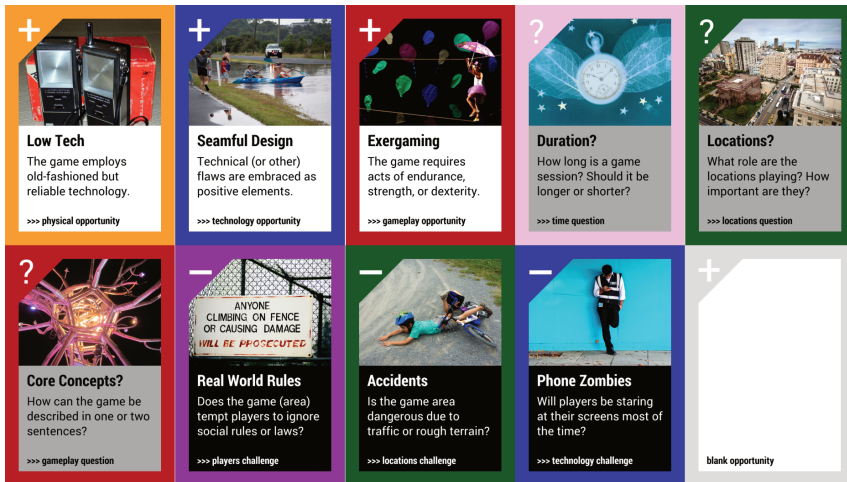


Figure 1: Final iteration of Mixed Reality Game Cards. Examples of Opportunity, Question, Challenge cards, and a blank card.

The graphical layout of all cards of mixed reality game is identical. The upper left corner denotes the type of card (+, ?, -) which is further supported by using text on white background for *Opportunities*, grey background for *Questions*, and black for *Challenges*. In addition, the type of card is written at the bottom of the card. Apart from a type, each card also belongs to a category. The categories are *audio*, *gameplay*, *locations*, *management*, *physical*, *players*, *sensors*, *technology*, and *time*. The category is written next to the type on each card. We used color-coding based on these categories to make the cards visually more distinct and allow designers to quickly identify related cards. The actual content of a card consists of three parts. A photo takes up the upper half, followed by a title and a three-line description. The back of the cards do not contain any content and just displays the type to make sorting easier. All cards have typical playing-card size dimensions: 64 x 89mm (2.5 × 3.5 inches).

For deriving the content of the cards we used several methods. Some of the cards were created based on our personal experiences in developing mixed reality games over several years as researchers. Other cards are based on related work about specific mixed reality games or mixed

reality game design in general (e.g. sources cited in the introduction of this paper). Lastly, observations and feedback from each study also fed back into the card deck. We do not claim that the deck is necessarily complete, however we believe that it covers a large and diverse area of the design space. The deck also includes blank cards of each type to allow designers to extend the cards with their own *Opportunities*, *Questions* and *Challenges*.

THE RULES

Using the *Mixed Reality Game Cards* can be roughly divided into three stages:

- idea generation (coming up with initial ideas)
- idea development (evolving an idea)
- idea documentation (archiving the final state of the idea).

During our studies, we used the cards in groups of three to five designers which also included some rather heterogenous groups of designers with different backgrounds and levels of experience. In general it is a good idea to sit around a table that is large enough to move cards around and form contextual groups with them on the fly, but it should also not be so big that not all designers can easily reach the cards. Pens, paper, post-its etc. are valuable additions to any design session and the *Mixed Reality Game Cards* are no exception. For all the processes it is important to note that the designers are free to interpret any card however they choose: They can focus on the title, a word from the description, and/or any detail on the image or what they associate it with. There is never a “wrong” interpretation of a card.

Category	Opportunity	Question	Challenge
audio (yellow)	COMPELLING AUDIO, MOBILE SOUNDTRACK		NOISE
gameplay (red)	AREA CONTROL, COLLECTING, CREATIVITY, EXERGAMING, EXPLORATION, MINI GAMES, PERFORMATIVE PLAY, RIDDLES, SCAVENGER HUNT, STRONG NARRATIVE	BEGINNING AND END?, CHALLENGING?, CORE CONCEPTS?, EXPERIENCE FLOW?, FUN AND JOY?, MAIN MECHANIC?, THEME AND STORY?	FEATURE CREEP, UNINTENDED RACE
locations (green)	FITTING LOCATIONS, GENERATED LOCATIONS, HEADQUARTERS, SUBVERTED LOCATIONS, UNUSUAL LOCATIONS	INDOOR OR OUTDOOR?, LOCATIONS?, SIZE OF AREA?	ACCIDENTS, BLAND LOCATIONS, DISRUPTION, DYNAMIC PLACES, GETTING LOST, LONG DISTANCES, OVERCROWDING, RELOCATION
management (brown)	OPEN AUTHORIZING, PUPPET MASTERS	OBSERVING PLAYERS?	TESTING
physical (orange)	ACTORS, LOW TECH, SET CONSTRUCTION, TECHNICAL ARTIFACTS, USEFUL PROPS, VEHICLES, WEATHER INPUT	NOTHING PHYSICAL?	RAIN AND SNOW, SUNSHINE
players (purple)	ALTERNATE REALITY, COLLABORATION, COSTUMES, DIFFERENT ROLES, ONLINE PARTICIPATION, ROLEPLAYING, SOCIAL CONTRACT, WORLDWIDE	NUMBER OF PLAYERS?, TARGET GROUP?	CRITICAL MASS, REAL WORLD RULES, UNCLEAR INSTRUCTIONS
sensors (turquoise)	MANUAL INTERACTION, MOTION TRACKING, PASSIVE TRACKING, PHYSIOLOGICAL DATA, PUBLIC INFRASTRUCTURE, STATIONARY SENSORS, WIZARD OF OZ	SUITABLE SENSORS?	INACCURATE SENSORS
technology (blue)	AUGMENTED REALITY, GLOBAL GAMESTATE, PEER-TO-PEER, PUBLIC DISPLAY, SEAMFUL DESIGN, TELEPHONY, TERMINALS	GAME SERVER?, NOTHING DIGITAL?	BATTERY LIFE, CONFUSING INTERFACE, GIMMICKY TECH, PHONE ZOMBIES, UNENGAGING AR, UNSTABLE CONNECTIVITY
time (pink)	EPISODIC CONTENT, TIME PRESSURE, TIMED EVENTS	DURATION?	

Table 1: Overview of all Mixed Reality Game Cards.

Idea generation

Idea generation is the first phase of the design process. The goal is to generate several simple but intriguing game ideas in a short amount of time. In order to facilitate this use case, we combine the *Opportunity cards* with something we call *Theme cards*. These are cards that serve

as an additional source for inspiration without any connection to mixed reality games. We suggest using surreal and/or detail-rich images and recommend repurposing cards from the board game *Dixit* (Roubira, 2008). Figure 2 shows some examples from the expansion *Dixit Odyssey* (Roubira, 2011) that were used in our studies. These cards feature dreamlike illustrations that offer multiple interpretations and as such proved to be a powerful way to spark creativity when designing games.



Figure 2: Example Dixit cards.

For guiding the interactions with the cards, we propose two methods that are reminiscent of *PLEX Brainstorming* and *PLEX Scenario*:

Limited choice. Each designer draws three *Opportunity cards*. A randomly-chosen *Theme card* is revealed in the center of the table. One designer places one of their cards openly next to the *Theme card* and describes how the two cards combine into a game idea. All designers are encouraged to discuss the proposed idea together. Then the other designers do the same and play one card into the communal area, further extending the game idea. They can either do this in turns or, depending on who has “the best” card. When as many *Opportunity cards* have been played as designers are participating, the final step is to agree on a game idea to write down.

Random draw. The designers reveal three random *Opportunity cards* and a *Theme card* in the center of the table at the same time. They then jointly discuss how all four cards can be combined into one game idea – they are not allowed to ignore any of the cards. It is a good idea to enforce a time limit of around five minutes to ensure the group does not lose focus. As with the other variant, designers are encouraged to write down their game idea.

Idea development

Designers that start with idea generation can choose one of those ideas to further develop. If they already have a specific idea in mind they can also start with this stage. During idea development the designers get to use all types of cards. They start with the *Opportunity cards* to further flesh out their game design idea. This time they are not restricted by a card limit, and they are also encouraged to remove any cards from the table that no longer represent the game idea. In order to do so the designers each draw three cards, and then play or discard cards depending on whether they enhance the design. Designers can also draw new cards at any time or fish out a specific card if they think it is especially relevant. When they have worked on their idea in this way for a while, they can decide to continue with the next step and introduce the *Question cards*. The *Opportunity cards* stay on the table, representing the current state of the idea. However, they now draw *Question cards* and play them as triggers for a discussion if they believe they are helpful or crucial for their design. The *Question cards* should help the designers to ground their idea and turn it into something more concrete. When the designers feel that they have covered the important aspects they move on to the final step. The *Challenge cards* are used in the same manner as the other two types of cards. This time, however, the game idea is “proofed”. The cards serve as prompts to evaluate if there are any obvious (or non-obvious) flaws or holes in the design.

Each of these steps of the idea development stage typically lasts about 30 minutes. Designers can of course extend or shorten this duration based

on the overall flow of this stage. Likewise, they might want to go back and forth between the different steps. This is typically the case when *Question* or *Challenge cards* change the designer's perception of the game idea; adding or removing *Opportunity cards* lets them change the representation of the idea.

Idea documentation

The last stage of interacting with the cards is to document the final state of the idea. Designers from our studies usually found it helpful to arrange the important cards from the previous stage in a meaningful way (e.g. by forming conceptual groups). This can be done on the table itself, on a large sheet of paper, or a white board. If the cards are annotated and connections are drawn between them, they serve as a useful visual reminder of the overall game design idea (as seen in). This should ideally not be limited to just *Opportunity cards* but also include *Questions* and *Challenges* that were heavily discussed or were crucial for design decisions. In addition, cards that no longer seem important should be removed to streamline the idea. This documentation stage makes sure all designers have the same understanding of the game idea (and therefore more often than not will spark additional discussion).

First Series of Studies

When we performed our first studies, the card deck consisted of 69 different cards: 36 *Opportunity cards*, 13 *Question cards*, and 20 *Challenge cards*. These cards were much more text-heavy than the final iteration: Cards contained examples and additional explanations (see Figure 3). Due to being the initial version, the graphic design was also less sophisticated. Here our focus was to gain a general understanding of how the cards work together, the impressions that participants get from them, and identify obvious areas for improvement are. To this end we conducted a total of three studies with different types of participants

and slightly different approaches to the structure of the studies. We have summarized these studies in Table 2.

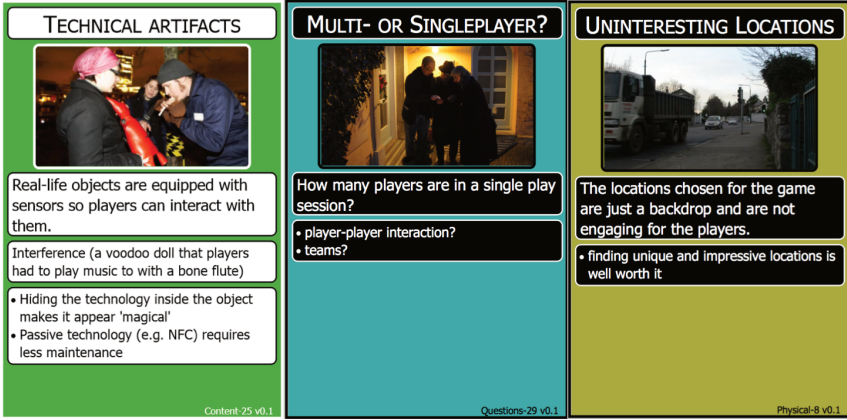


Figure 3: First iteration of Mixed Reality Game Cards.

Study 1.1	<p>15 bachelor students of games computing participated in this study. It was conducted as part of a two-week voluntary non-graded module on mixed reality game development. Students formed four groups of three to five participants each and utilized the cards in a total of three sessions of 25 minutes (idea generation; limited choice), and 45 and 25 minutes (idea development). After each session, participants filled in questionnaires about their experience.</p>
Study 1.2	<p>As part of a research project we ran a study with 24 participants consisting of professionals and academics that were divided into groups of five participants. Each group had already developed initial game ideas, and they used all types of cards to further explore their designs. The groups had one hour for idea development and afterwards completed questionnaires.</p>
Study 1.3	<p>We also wanted to trial the cards with a group of inexperienced users and got this opportunity at a writer’s festival. Two groups of five writers, authors and publishers participated in this study. Participants used Opportunity cards with no restrictions prescribing the amount of cards that could be used. The session lasted 45 minutes, and was followed by questionnaires and a semi-structured interview.</p>

Data collected: notes, photos, videos, questionnaires, interviews.

Table 2: Overview of studies conducted during iteration 1.

Our impressions from the first series of studies led us to believe that the cards were well received. The cards were deemed as helpful for brainstorming and fun to interact with. The collected quantitative data

from the first three studies (Table 3) supports this impression. With open-ended questions we gave participants the ability to point out which aspects they liked and disliked. Each quote is attributed to a study and a participant in parentheses, e.g. 1.1-P5 denotes participant 5 from study 1.1.

Positive feedback stated that the cards simplified brainstorming, broke the ice, were easily accessible, sparked creativity, and lowered the barrier for proposing ideas.

“It simplifies brainstorming and makes it more fun.” (1.1-P5)

“They allowed for good brainstorming and discussion without having to spend lots of time coming up with ideas from scratch. They helped provide a framework to build ideas off of.” (1.1-P11)

“Help create discussion. Help to break the ice.” (1.2-P3)

“Makes it easy to discuss in a new way.” (1.2-P15)

“All the members of the group were able to participate and add to the brainstorming.” (1.2-P20)

“It was the interaction of our creative minds that was fun – the cards were the tool to enable this.” (1.3-P9)

“It’s easier to present ideas. It’s not personal when you reject an idea.” (1.1-P10)

The main negative points concerning the cards were the graphic design (perhaps unsurprisingly) and the amount of text that was depicted on them.

“I understand the cards are in the development phase – so the visual appearance will be improved.” (1.2-P20)

“Could have a nicer design to be friendlier to the eye.” (1.1-P3)

“Overload of information.” (1.1-P2)

“It took some members a re-read to fully take in the meaning of the card.” (1.3-P9)

“Less information might improve interpreting the cards.” (1.2-P10)

“After playing the card, everybody needed some time to read it.” (1.2-P8)

“Hard to read when they were upside down.” (1.3-P4)

Study	Question	1	2	3	4	5	AM	SD	n
1.1	The cards were very helpful for brainstorming.	0%	8%	25%	33%	33%	3.92	0.95	12
1.1	I enjoyed using the cards.	0%	0%	25%	33%	42%	4.17	0.8	12
1.2	It was fun using the cards.	4%	0%	13%	33%	50%	4.25	0.97	24
1.2	The Opportunity cards were useful for brainstorming.	0%	4%	21%	29%	46%	4.17	0.90	24
1.2	The Question cards were useful for brainstorming.	0%	0%	17%	33%	50%	4.33	0.75	24
1.2	The Challenge cards were useful for brainstorming.	0%	0%	13%	42%	46%	4.33	0.69	24
1.3	Interacting with the cards was fun.	10%	0%	30%	40%	20%	3.6	1.17	10

Table 3: Questionnaire data from studies 1.1, 1.2 and 1.3. (1 = “I don’t agree”; 5 = “I agree”; AM = arithmetic mean; SD = standard deviation; n = number of participants)

In addition to these general observations we also noticed a potential weakness in the idea generation stage. Participants of the first study were following limited choice (selecting a card from their hand to play). While this worked well for them and they created a variety of interesting ideas, we also noticed a tendency to play a card that fit with the others. In one instance for example a participant had played

Dominant Audio as the first card. Another participant then wanted to add Large AR to the game idea. Playing the card however was met with strong protests from the other two group members who thought such a combination “*does not make sense*” (1.1-P3). After a short argument, the participant withdrew the card and instead played a card that was seemingly more compatible, Peer-to-Peer. We believe the barrier to play a somewhat matching card is lower than to play one that contradicts the current idea in some ways. Our (subjective) impression was that this behaviour led to less daring ideas overall.

As an experiment, we skipped the initial idea generation stage with the participants from study 1.3. We wanted to see how an unrestricted brainstorming would develop. In both instances participants were building seemingly elaborate ideas consisting of many cards. When playing a card, a participant would introduce it with phrases like, “I think this fits really well” or “I think we should also have this element”. Instead of fleshing-out an existing idea, it had the opposite effect and diluted it. During the reflection after the session the participants mentioned this aspect of the design process: “*I found the cards *very* helpful as a brainstorming exercise, but moving past the purse of ideas into a more concrete concept proved difficult.*” (1.3-P6) Another participant had a similar view: “*The cards gave the conversation direction, but at random. I found myself getting lost, as each group member was stringing together very different thought patterns, in constant flux.*” (1.3-P7) Finally, a third participant phrased it more drastically: “*They encouraged us to speak in hypotheticals. They created bland, uninspired ideas.*” (1.3-P10) In both cases the introduction of the *Question cards* seemed to work, however, the participants started to reign in their idea and rediscovered the original core of it.

Second Series of Studies

For the next phase of studies, we created a new iteration of the cards: 44 *Opportunity cards*, 17 *Question cards*, and 21 *Challenge cards* made up a deck of 82 cards. Based on the experiences with the previous iteration we drastically reduced the amount of text on the cards and improved the graphic design (see Figure 4).

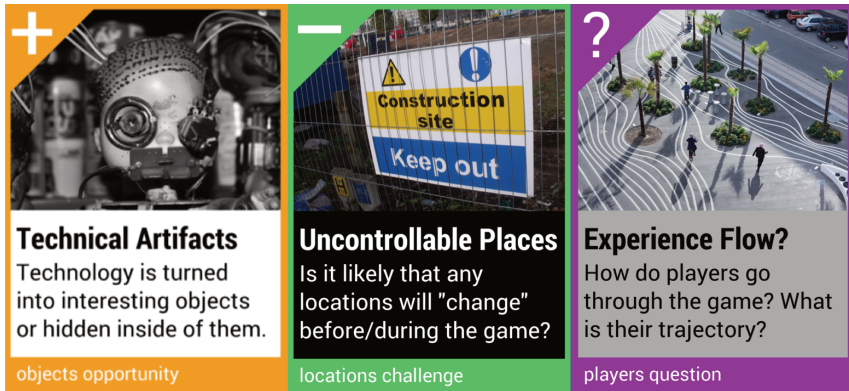


Figure 4: Second iteration of Mixed Reality Game Cards.

For the new series of studies we were especially interested in more-thorough feedback concerning the split into the three different types of cards. We also wanted to find solutions for the observed problems concerning the initial idea generation step and explored the different methods to improve this phase in more detail (i.e. the aforementioned *limited choice* and *random draw*). Unlike in the previous section, we will discuss the studies separately to provide better insights into the peculiarities of each. We are doing this by providing illustrative quotes from semi-structured interviews conducted with the participants after each session. To highlight especially salient parts of their statements, we have emphasized these in bold.

Study 2.1 – Academics, Professionals, Artists

The study was conducted with 25 academics, professionals, and artists who had previous experience with creating mixed reality games. The participants were divided into groups of five and handed the Mixed Reality Game Cards as well as instructions on how to use them. Each group started with idea generation, trying out both limited choice as well as random draw. Here, we also introduced a first version of Theme cards that consisted of single words and phrases that had some relevance for the participants: Down Under, Heaven and Hell, (Re)Distribution and Theft, GameCity, and #gamergate. After participants had created several ideas they were told to choose one and use the remainder of their time to explore this idea in more depth with the help of the other cards. The groups spent a total of three hours with the Mixed Reality Game Cards and went on to implement their ideas in prototype form the following day.

Theme Cards

In general participants were not overly positive about the specific *Theme cards* we had created, but the cards did seem to influence their ideation session nonetheless: *“The Theme cards were kind of... I don’t think the Theme cards really helped us think of the game at all. But when we looked back we caught some theme, with the Heaven and Hell and Down Under. But that was just coincidence, I think.”* (2.1-P1)

Another participant had a similar opinion: *“The themes were okay. Not particularly the kind of themes I would have chosen but they were **good starting points for discussion**, which is what I think the purpose is.”* (2.1-P2)

However, another participant underlined the importance of having these cards in the first place: *“I think the topics are essential for making a game jam, or making a game ideation event, because **without the topic***

people would find it very difficult to come up with a game idea, so in my opinion the card set should include a number of 30 or 40 topics plus the possibility of course for the participants to create their own topics. But I would include topics into the card set.” (2.1-P6)

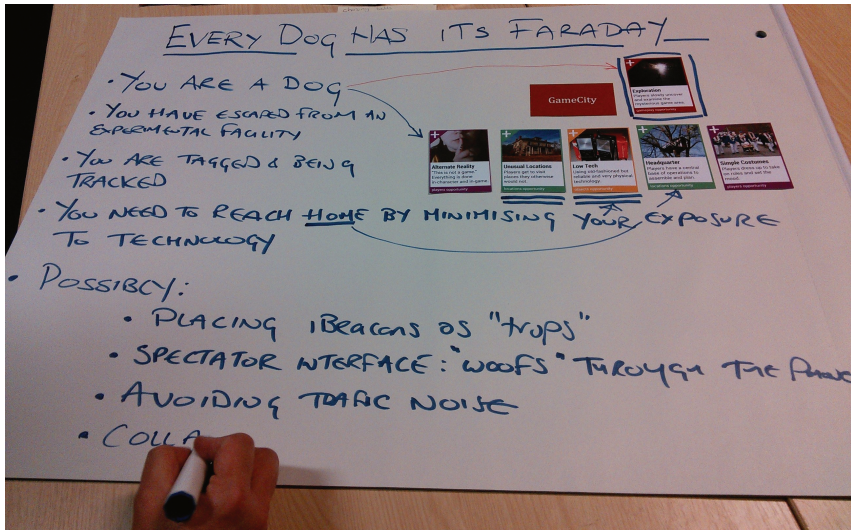


Figure 5: Game idea from study 2.1 (Every Dog Has Its Faraday).

Rules

Concerning the two variants for idea generation, we received seemingly mixed feedback. One group clearly preferred *limited choice*. Their argument was similar to what we observed during the previous iterations: “*Somebody played Social Contract, and somebody else said ‘Oh, I think User-Created Content really fits nicely to that.’*” (2.1-P10)

Another group member made a similar remark: “*You could really sculpt out a strong connection between the cards that instantly seemed to make sense.*” (2.1-P11)

When asked what they perceive as the difference between the two methods, one of them described the perceived easiness when being able

to select cards: “*I feel if we can play any card we like **it’s much easier** because I can decide what we are going to build.*” (2.1-P10)

Another participant put an emphasis on the agency that comes with a choice of cards: “*I think it probably works better when you’ve got the degree of choice because you can sort of **guide it in a direction you want.***”

The same participant then however makes an important observation that highlights the advantage of the other variant, *random draw*: “*But when it’s just the cards down there it could turn out really brilliantly because **the cards could design something for you**, or give you the seeds for something really cool.*” (2.1-P9)

Whereas *limited choice* provides the participants with more agency and makes it easier for them, *random draw* forces them to be creative with potentially more interesting and unique outcomes. The latter is nicely illustrated by another group that designed the game *Restickulous* where you have to sneak a cardboard cut-out of the Eiffel Tower attached to a long stick into selfies that other people take. Here the participants attribute the design to the randomly-drawn cards (see Figure 6): “*That game is **exactly the three cards that we got.***” (2.1-P3) Another participant agrees: “*We made those exact three cards into a game. **We didn’t deviate** I guess is the thing.*” (2.1-P4) The previous participant explains it further: “*So it was literally **us thinking about those three things**, and we thought it’d be funny and that’s where that came from. [...] We would have **never come up with that otherwise.***” (2.1-P3)



Figure 6: Cards that were the inspiration for Restickulous.

In regard to the idea development stage, a participant from another group recalled the difficulties the group had forming a coherent idea because group members kept adding *Opportunity cards*: “At this moment we would have needed the negative cards. **To eliminate things and to ask ourselves, what are we doing?** That’s why the *Question cards* were good which then said: ‘What is the core mechanic?’ etc.” (2.1-P6)

The *Restickulous* group also described their experiences with the *Question cards* when working on another game: “We got in a deadlock really. We couldn’t figure out how to make it a game. And we were using those to try and help. **It helped us work through the things.**” (2.1-P3) Another participant from that group explained how the *Question cards* stimulated the discussion while perhaps not being directly helpful in overcoming their creative block: “I think we got to the point where we thought the card game was not working, so we pulled them out. **But I don’t know that they necessarily led to any changes.** [...] But it’s hard to

say that's not useful in itself, because you sort of do that and you go, 'Hey, that didn't work', and **the conversation flows on.**" (2.1-P4) The same participant however then elaborated: "My overall feeling is the cards kind of worked. [...] **The cards stopped us from going too broad and being just crazy, and helped us narrow our focus quickly.** [...] Having some structure that pulls you back was really useful." (2.1-P4)

Study 2.2 – Content Experts, App Developer

In this study we worked together with a team of four professionals: one developer of location-based applications and three members from a cultural center. The study was embedded in a bigger hackathon-like event where members of the cultural center wanted to develop a prototype for a mixed reality game to accompany a photography festival they were organizing. We used the cards on the first day in all stages over the course of 3 hours. Based on the feedback from study 2.1 we made new attempts to identify suitable *Theme cards*: We used both VNA cards and *Dixit* cards as replacements (separately from each other) while employing the *random draw* variant for idea generation.



Figure 7: Final selection of cards from study 2.2.

Feedback from the participants indicated a clear preference for Dixit: “I thought the VNA cards were clever, but I didn’t find them that useful. I found the Dixit cards incredible useful, because **they got my creative juices flowing and made me open up** a little bit and settle into the ideas. When people were talking there wasn’t a lot of focus on the VNA.” (2.2-P4)

It is fair to acknowledge at this point that the VNA cards are not really designed as supporting cards. The Dixit cards however provide a rich source for additional inspiration due to them being extremely detailed and surreal. Another participant put it this way: “I think as inspiration points, **specifics don’t work as well** as vague, kind of, you know, just think about the universe, sort of things. [...] It also allowed us to be unrestricted in our ideas and the Dixit card allowed us to **think outside of the box**, especially in relation to theme and its effect on the mechanics.” (2.2-P2)

When asked about the idea development stage the same participant describes the difference between the cards: “*When we first started out it felt like we had a **very sprawling idea**, kind of, and **lots of conversations about the specifics** of what these things might involve. Then later on it became a **much broader conversation** about like ‘this could be a problem for that, that, but overall it’s not gonna be an issue’. You know I think we had much less specific conversations doing the questions and the negatives than we did with the positives.*” (2.2-P2)

The participant then went on to illustrate this argument with an example: “*Which I think is good because **the positives are inspiring ideas**, they are things like you said, that we didn’t really think about before. You know, like coming up with the Telephony thing. Literally seeing the word telephony and thinking how would that relate to this project, immediately made me think of the voice mail thing. **And that’s not an idea I had previously and I wouldn’t have arrived at it without having an inspiration card.***” (2.2-P2)

The *Opportunity* cards worked as a trigger for inspiration whereas *Questions* and *Challenges* grounded the idea and allowed it to become more concrete. Figure 7 shows how they documented their final game design idea.

Study 2.3 – Charity Members, Artist

For the final study with iteration 2 of the cards, we wanted to take another look at the idea generation stage. The study participants consisted of three members of a national charity that were interested in promoting the use of public transport, bicycles, or walking by creating a mixed reality game. The group was completed by an artist who had created several location-based experiences in the past. Over the course of 45 minutes the group created six brief game ideas by using *Dixit* cards and the *random draw* rules variant.



Figure 8: Game idea from study 2.3.

Perhaps unsurprisingly, the task was rather difficult for the members of the charity who had no previous experience in game design: “*But frankly I found the whole thing really hard. Simply because **I don’t think like that.** I’m not at all... It made me realize how ingrained I am in my thinking. You know. **It was quite difficult to think differently.**” (2.3-P2)*

The artist however noticed how their different perspective on things actually helped in the exercise: “*I was able to copy, to some extent, what I already had in my head. Whereas I was amazed about the things that the three of you were coming up with. Which seemed **much more***

original than the reference points I had in my head quite a lot of the time.” (2.3-P4)

The participants were sometimes tempted to disregard one of the four cards when it did not clearly fit with the idea they had developed so far. The artist stated why doing so might not be a good idea: “*Rather than saying: ‘Here’s three that fit and this one that doesn’t’, actually the creative bit is **making the one that doesn’t fit, fit** with the three that do. And **that’s where the hard work comes in** generally. Otherwise there’s the danger that what the game becomes is just making connections between three of the four. And jettison the missing one. And that becomes the task then. Whereas actually the task should be to allow yourself to say anything. **To force you almost to say something different.**” (2.3-P4)*

Instead of discarding a difficult card, the group policed themselves as mentioned by one of the other participants: “*I must admit, I found myself then in another role where I felt that the card with the stairs was gonna be discarded. **I was kind of quite keen to make sure that they didn’t.**” (2.3-P3)*

The artist agrees that this was the right move: “*And that worked actually for the stairs one, didn’t it?*”

The three charity members also reflected on the interplay between the Dixit card and the Opportunity cards (see Figure 8):

*“I liked the fact that the three coloured cards with the words on **them set some rules around the game.** And then the picture card is revealed and then **kind of takes it off.**” (2.3-P3)*

*“It’s like **a wild card** isn’t it.” (2.3-P2)*

*“So you read the words on the cards, for me I think the picture card adds some images, some imagery, that then **takes the idea off in a way**”*

that couldn't be achieved if you just had three of the coloured cards and no strange picture card.” (2.3-P3)

Design Lessons for Ideation Cards

Over the course of six studies we observed how expert and inexperienced designers created several ideas for mixed reality games (some of which were also implemented in prototype form). A small sample of these ideas can be seen in Table 5. Ultimately, our experiences are encapsulated in the final design of the Mixed Reality Game Cards which are presented in the early sections of this paper. The cards have proven to be an effective tool to shape the collaborative design of mixed reality games. We believe that this success can be traced back to the following characteristics of the cards and rules:

- Separation of cards into Opportunities, Questions, Challenges
- Domain-extrinsic Theme cards
- Rule variants for idea generation

In the following, we will reflect on these aspects in order to share our insights with future designers of ideation cards of other domains.

Study 1.1	Players have to find NFC tags hidden at exhibits in a local museum as fast as possible while holding their mobile phone as steady as possible. If it shakes too much, they need to go back to the starting position.
Study 1.2	Players control a virtual tribe. The game world is overlaid onto the real world and players need to provide their tribe with food etc. that they for example gather by visiting lakes.
Study 1.3	Actors are dressed up as literary characters and send players on a scavenger hunt through the city.
Study 2.1	The players take on the role of a dog that has recently escaped from a research facility and is now extremely susceptible to wireless signals. Players have to avoid Bluetooth, Wi-Fi, and mobile connectivity and make it to freedom without getting sick from radiation (see Figure 5).
Study 2.2	Players are detectives and need to visit locations of a photography festival where they have to solve clues in order to gradually unlock a greater mystery (see Figure 7).
Study 2.3	Visitors of a music festival need to use a bicycle home trainer to generate enough energy to keep the festival going (see Figure 8).

Table 5: Sample game ideas conceived as part of the different studies.

Opportunities, Questions, Challenges

A defining element of our ideation cards is the fact that they are designed to help both in idea generation as well as idea development. We have achieved this by devising three types of cards: *Opportunity cards* can be used to construct a game and define its features. *Question* and *Challenge cards* on the other hand are used to make designers reflect on the current state of their design and shape the idea into a more concrete form. *Opportunity cards* resemble ideation cards like *VNA* or *PLEX*. They talk about *specifics* and provide the building blocks for *inspiring ideas*. *Question* and *Challenge cards* represent the other type of ideation cards exemplified by *The Deck of Lenses* and *Exertion cards*. They make sure to take a potentially *sprawling idea* and create a *broader conversation* about it. They help to *eliminate things* and let designers ask themselves ‘*what are we doing?*’ They help to *narrow down* an idea and *keep the conversation flowing*.

These different cards are to be used in different stages of the ideation process. *Opportunity cards* stand at the beginning, and are the only cards (together with *Theme cards*, see below) that should feature during idea generation. They are also the core around which an idea is then expanded on during idea development. *Question* and *Challenge cards* turn the idea development from being constructive (as in: constructing an idea) into a more reflective activity. They highlight areas that the designers so far have not fully fleshed out, and in general provide a grounding to the idea. While such an approach is unique for ideation cards, it is reminiscent of the *Six Hats* method for brainstorming (De Bono, 1999). Each metaphorical hat stands for a different type of input into the brainstorming sessions as summarized in Table 6. We can argue that *Opportunity cards* correspond with the *Green Hat* whereas *Challenge cards* take on the role of the *Black Hat*. *Question cards* are most similar to the *White Hat* but not limited to the facts from before the idea was generated. Instead they let participants find the boundaries established by the idea itself. *Red* and *Yellow Hats* have no direct counterpart, but could be added as soft phases throughout the session. A *Blue Hat* moderator would however be very valuable. For inexperienced groups it is, for example, not easy to know when best to transition from using the *Opportunity cards* to the next type of card. Timing is very important in this regard – otherwise designers might be tempted to keep extending and diluting an idea by adding more and more *Opportunity cards*.

Hat	Function	Description
Blue	Moderating	Keeping the session on track and makes sure everyone follows the guidelines.
Green	Creativity	Proposing new ideas, exploring alternatives, and expressing new concepts.
Yellow	Positivity	Stating just the positive elements of the current idea(s).
White	Facts	Describing the known elements and conditions the idea has to work in/with.
Black	Negativity	Pointing out flaws and weaknesses of the current idea(s).
Red	Emotions	Voicing one's feelings about the current idea(s) without having to justify it.

Table 6: De Bono's Six Hat method for brainstorming.

Limited choice vs. random draw

For the idea generation stage, we propose two different methods that resemble *PLEX Brainstorming* and *PLEX Scenario*. *Limited choice* allows designers to choose a card to play from their (limited) hand whereas *random draw* has them randomly reveal the cards. Participants felt more comfortable with *limited choice* and perceived it as being *much easier*. This variant provides them with agency by letting them decide which card to play. It allows them to *guide the game idea in the direction they want*. Designers might however be drawn to cards that *fit nicely* to each other and *instantly make sense*. With *random draw* on the other hand they cannot control as much whether such a *strong connection* can be made. From a positive perspective however, the *cards could design something for you*. They can be *seeds for a unique idea* that designers might otherwise never have come up with. This method is also *much harder*. It is more difficult to shape an idea out of a completely random combination, to *make something that does not fit, fit*. This variant requires more self-control from the designers. It would be easy to just discard a card that seems impossible to combine with the rest, but *that's where the hard work comes in*. It is even more required to say something different, to *think differently*.

Overall, we recommend that inexperienced designers or designers unaccustomed to the design space of mixed reality games should start with the easier *limited choice*. This allows them to get a general understanding of the cards and can serve as a warm-up period. If there is a concrete goal for a game, this approach can also be better suited as it allows some steering of an idea. For creating ideas that are potentially more surprising and creative, the *random draw* variant seems to be more suited. With some discipline and a reasonable time limit, designers can rapidly go through several combinations of cards and see if one of the many ideas might be worthwhile taking further.

Theme Cards

Like our *Mixed Reality Game Cards*, many ideation cards feature images as part of their design. They are often added to better convey the concept of the card but also to serve an additional source of inspiration. Our approach goes a step further and adds additional *Theme cards* to the mix that only serve this one purpose. *Theme cards* are a *good starting point for discussions* and they arguably make it easier to come up with a game idea in the first place. We have found that *Dixit* cards work well for this purpose. They are overly rich in detail and thus offer several potential hooks from which an idea can be built. Good *Theme cards* can *get the creative juices flowing* and enable *outside-the-box thinking*. In order to work as inspiration points they need to be *vague*, as *specifics do not work as well*. *Dixit* cards achieve this by being extremely surreal.

This is in line with findings from a comparison of *Dixit* and *PLEX* cards as a source of inspiration for designers (Kwiatkowska et al., 2014). The authors report on the suitability of *Dixit* cards for such a task: “*They allowed for free interpretation, making it easier for designers to find the entry points on the given card and work further with them.*” Whereas *Opportunity cards* set the rules around the game, *Dixit* cards play the role of *wild cards* that *make the idea take off* in often unique and unexpected ways. Without them, participants of our studies would often

keep an idea at an abstract level – the addition of *Dixit* cards proved to be a great success and infused initial ideas with rich themes.

Conclusions

In this paper we have presented our *Mixed Reality Game Cards* – physical playing cards that can be used in playful ideation sessions to generate and evolve mixed reality game ideas. We combined different approaches employed by other ideation cards and created *Opportunity*, *Question* and *Challenge cards* that support the design process in the idea generation as well as in the idea development stage. For idea generation, the *Opportunity cards* are used in conjunction with inspiring *Theme cards* to rapidly generate several game ideas. As part of this stage we explored two variants that result in varying levels of difficulty and potential for creativity: *limited choice* and *random draw*. During the idea development stage all cards work together to shape the game into a more concrete form thanks to thought-provoking *Question* and *Challenge cards*. The takeaways from our studies are not only applicable to this specific deck of ideation cards and mixed reality game design, but potentially also for other genres like board or video games, or specific subgenres (e.g. first-person shooters, racing games).

Acknowledgements

While conducting the work presented in this paper, the first author was a PhD student at the Mixed Reality Lab of the University of Nottingham. The work was partially funded by EPSRC grant EP/I011587/1. The *Mixed Reality Game Cards* can be found online at <https://www.pervasiveplayground.com>.

Bibliography

Alves, V., Roque, L., (2011). An inspection on a deck for sound design in games, in: Proceedings of the 6th Audio Mostly Conference: A Conference on Interaction with Sound, AM '11. ACM, New York, NY, USA, pp. 15–22. doi:10.1145/2095667.2095670

Alves, V., Roque, L., (2010). A Pattern Language for Sound Design in Games, in: Proceedings of the 5th Audio Mostly Conference: A Conference on Interaction with Sound, AM '10. ACM, New York, NY, USA, p. 12:1–12:8. doi:10.1145/1859799.1859811

Ballagas, R., Kuntze, A., Walz, S.P., (2008). Gaming Tourism: Lessons from Evaluating REXplorer, a Pervasive Game for Tourists, in: Indulska, J., Patterson, D.J., Rodden, T., Ott, M. (Eds.), Pervasive Computing, Lecture Notes in Computer Science. Springer Berlin Heidelberg, pp. 244–261. doi:10.1007/978-3-540-79576-6_15

Bell, M., Chalmers, M., Barkhuus, L., Hall, M., Sherwood, S., Tennent, P., Brown, B., Rowland, D., Benford, S., Capra, M., Hampshire, A., (2006). Interweaving mobile games with everyday life, in: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, CHI '06. ACM, New York, NY, USA, pp. 417–426. doi:10.1145/1124772.1124835

Benford, S., Crabtree, A., Flintham, M., Drozd, A., Anastasi, R., Paxton, M., Tandavanitj, N., Adams, M., Row-Farr, J., (2006). Can you see me now? ACM Trans Comput-Hum Interact 13, 100–133. doi:10.1145/1143518.1143522

Benford, S., Flintham, M., Drozd, A., Anastasi, R., Rowland, D., Tandavanitj, N., Adams, M., Row-Farr, J., Oldroyd, A., Sutton, J., (2004). Uncle Roy All Around You: Implicating the city in a location-based performance. Proc Adv. Comput. Entertain. ACE 2004 21, 47.

Brandt, E., Messeter, J., (2004). Facilitating Collaboration Through Design Games, in: Proceedings of the Eighth Conference on Participatory Design: Artful Integration: Interweaving Media, Materials and Practices – Volume 1, PDC 04. ACM, New York, NY, USA, pp. 121–131. doi:10.1145/1011870.1011885

Chalmers, M., Galani, A., (2004). Seamful interweaving: heterogeneity in the theory and design of interactive systems, in: Proceedings of the 5th Conference on Designing Interactive Systems: Processes, Practices, Methods, and Techniques, DIS '04. ACM, New York, NY, USA, pp. 243–252. doi:10.1145/1013115.1013149

Davidsson, O., Peitz, J., Björk, S., (2004). Game Design Patterns for Mobile Games. (Project report to Nokia Research Center).

De Bono, E., (1999). Six thinking hats. Taylor & Francis.

Halskov, K., Dalsgaard, P., (2006). Inspiration Card Workshops, in: Proceedings of the 6th Conference on Designing Interactive Systems, DIS '06. ACM, New York, NY, USA, pp. 2–11. doi:10.1145/1142405.1142409

Hornecker, E., (2010). Creative Idea Exploration Within the Structure of a Guiding Framework: The Card Brainstorming Game, in: Proceedings of the Fourth International Conference on Tangible, Embedded, and Embodied Interaction, TEI '10. ACM, New York, NY, USA, pp. 101–108. doi:10.1145/1709886.1709905

IDEO, (2002). IDEO Method Cards. San Francisco.

Kultima, A., Niemelä, J., Paavilainen, J., Saarenpää, H., (2008). Designing Game Idea Generation Games, in: Proceedings of the 2008 Conference on Future Play: Research, Play, Share, Future Play '08. ACM, New York, NY, USA, pp. 137–144. doi:10.1145/1496984.1497007

Kwiatkowska, J., Szóstek, A., Lamas, D., (2014). (Un)Structured Sources of Inspiration: Comparing the Effects of Game-like Cards and Design Cards on Creativity in Co-design Process, in: Proceedings of the 13th Participatory Design Conference: Research Papers – Volume 1, PDC '14. ACM, New York, NY, USA, pp. 31–39. doi:10.1145/2661435.2661442

Lucero, A., Arrasvuori, J., (2010). PLEX Cards: A Source of Inspiration when Designing for Playfulness, in: Proceedings of the 3rd International Conference on Fun and Games, Fun and Games '10. ACM, New York, NY, USA, pp. 28–37. doi:10.1145/1823818.1823821

Lund, K., Lochrie, M., Coulton, P., (2010). Enabling Emergent Behaviour in Location Based Games, in: Proceedings of the 14th International Academic MindTrek Conference: Envisioning Future Media Environments, MindTrek '10. ACM, New York, NY, USA, pp. 78–85. doi:10.1145/1930488.1930505

Möller, O., (2012). MethodKit. MethodKit.

Montola, M., Stenros, J., Waern, A., (2009). Pervasive Games: Theory and Design. CRC Press, USA.

Mueller, F., Gibbs, M.R., Vetere, F., Edge, D., (2014). Supporting the Creative Game Design Process with Exertion Cards, in: Proceedings of the 32Nd Annual CHI '14. ACM, New York, NY, USA, pp. 2211–2220. doi:10.1145/2556288.2557272

Niantic Labs, (2016). Pokémon Go.

Niantic Labs, (2012). Ingress.

O'Hara, K., (2008). Understanding Geocaching Practices and Motivations, in: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, CHI '08. ACM, New York, NY, USA, pp. 1177–1186. doi:10.1145/1357054.1357239

Roubira, J.-L., (2011). Dixit Odyssey. Libellud.

Roubira, J.-L., (2008). Dixit. Libellud.

Schell, J., (2008). The Art of Game Design: A book of lenses, 1 edition. ed. CRC Press, Amsterdam ; Boston.

Weal, M.J., Hornecker, E., Cruickshank, D.G., Michaelides, D.T., Millard, D.E., Halloran, J., De Roure, D.C., Fitzpatrick, G., (2006). Requirements for in-situ authoring of location based experiences, in: Proceedings of the 8th Conference on Human-Computer Interaction with Mobile Devices and Services, MobileHCI '06. ACM, New York, NY, USA, pp. 121–128. doi:10.1145/1152215.115224

8.

Source Code and Formal Analysis

A Reading of Passage

Ea Christina Willumsen

Transactions of the Digital Games Research Association

2017, Vol. 3, No. 2, pp. 213-235

ISSN 2328-9422

<http://todigra.org>

TEXT: Licensed under Creative Commons Attribution (CC BY-NC-ND 2.5) <http://creativecommons.org/licenses/by-nc-nd/2.5/>

IMAGES: All images appearing in this work are property of the respective copyright owners, and are not released into the Creative Commons. The respective owners reserve all rights.

ABSTRACT

Analysis of the source code of video games is not an integrated part of the formal analysis. Rather, few scholars have investigated how an analysis of the source code can inform a hermeneutic reading of the game. In this paper, I will present a reading of the source code of *Passage* (Rohrer, 2007), argue for why a traditional focus on authorial intention is unnecessary when investigating the symbolism and metaphors of a game, and illustrate how source code analysis can inform the formal analysis of the executed game. Finally, I will discuss how the source code relates to the game as a ‘work’, and how it can be used

for studies of symbolism and metaphors. Thus, I will conclude that it is indeed a valuable method for game studies, although further studies should expand on the textual relation between executed game and source code.

Keywords

Source code, formal analysis, authorship, authorial intent

INTRODUCTION

The computational aspect of games has received little attention within game studies, and only some within software studies, where white-box analysis, the study of the source code, is not understood in relation to a hermeneutic interpretation. Hardware, code, and execution are commonly treated as a “black box”, where the scholar has no access to the actual code. Already in 1985, Buckles looked into the various computer files of *Colossal Cave Adventure* (Crowther & Woods, 1977), in order to quote all possible texts generated by the system in reply to player input. One of the first scholars to point out the relevance of reading the code of a game is Konzack (2002), who, in his otherwise very humanities focused seven layer analysis model includes both hardware and program code. He argues that “[i]n a complete analysis of a computer game every layer of the computer game in question should be analysed, but it is still possible to make an analysis of a computer game with out [sic] taking every layer into account” (Konzack, 2002, p. 92). Even though he does not use the term, this makes Konzack not only one of the first game scholars to argue for the relevance of studying software in game studies, where the source code is considered in relation to the executed game, but also one of the few, if not only, to state that a complete analysis must also include an analysis of the code.

There are two main reasons why the source code is not often considered in the formal game analysis: 1) the fact that we rarely have access to the source code of the game, and 2) that the scholar may not be able to translate the code into anything meaningful, which can be both due to lack of experience in reading code, or because the analysis of the program as static text does not contribute to the comprehension of the game (Konzack, 2002).

The first reason is still a general concern. However, due to the expanding success of what is often referred to as ‘indie games’, and the popularity of open-source software, more source codes are published and thus available to the researcher (Lipkin, 2012). Therefore, the method of source code analysis seems especially relevant for the study of games authored by individuals or small teams, and where the auteur-style mode of production makes it more meaningful to search for an authorial intent. Oftentimes, these games are much less complex in terms of source code than e.g. AAA games, which makes them more easily accessible for analysis, as the complexity and length of the source code influences its readability and the time it takes for the scholar to get an overview and understanding of the underlying structures. As such, the complexity and length of the source code may directly influence the possibility and likelihood of using the code in a formal analysis, as the source code of some games will be more readily accessible than others. The second reason is one of the main motivations for this paper; I wish to illustrate that it is possible to conduct a hermeneutic reading of the source code, which is studied in relation to the executed game, without having to dive deep into algorithms or understand complicated syntax. Quite the contrary, it should be possible for most game scholars who have just a little experience of reading or writing code to gain valuable insights from the analysis of the source code from the game in question, as a significant part of the analysis in this paper focuses on the naming of variables and simple representations of rules actualised in the executed game. I wish to illustrate exactly how this method is useful for game analysis by studying *Passage* (Rohrer, 2007), which has already been a target for other researchers exploring the link between computer science and game

studies (Robinson et al., 2015). The game has also been studied outside of computer science, e.g. as experiential metaphor (Harrer, 2013), as an art game, specifically in relation to Jason Rohrer's author statement (Parker, 2012), and in relation to the proceduralist line of thought (Treanor & Mateas, 2013). Because of the great interest from researchers, with various interpretations of the meaning or message of the game, it serves as the perfect case for illustrating how source code analysis can prove useful in game studies. I will argue that such a reading can be used to study metaphors and symbolism in a very different way than what only the executed game allows for. When combining the formal analysis of the executed game with the analysis of the source code, I believe that we can find stronger support for a traditional hermeneutic interpretation of metaphor and symbolism. As such, much of what is to be perceived by the player in the executed game is connected to elements in the code, which pose arguments for or against common interpretations. As such, this paper emphasises how games can be understood as second-order design, where the designed object is the code itself which, when actualised, produces a text in the form of the executed game. To this day, only few game scholars, including Mateas (2003), Wardrip-Fruin (2009), and Montfort and Bogost (2009), have used source code analysis as a method for studying games, and they have all approached the source code in various ways. One thing existing applications have in common is their focus on traditional authorial intent, which I will argue does not have to be an inherent part of source code analysis in the context of game studies. For the case of *Passage* this also means that the creator statement from Jason Rohrer (2007) should be unnecessary for a formal reading of the game, and I will illustrate how much of the information provided in this paratext is easily found in the source code. In the next chapter, I will outline the critique of authorial intent, in order to present how other scholars' readings of the game are all based on traditional notions of intentionality and authorship where explicit author statements are used to explore and understand the game object itself.

AUTHORIAL INTENT AND THE INTENTIONAL FALLACY

The notion of authorial intent is originally a part of literary theory and aesthetics. Its relevance has been, and is still, widely discussed in relation to literature as well as games. One of the most influential critiques of the increased focus on the author comes from Wimsatt and Beardsley (1946), who argue that “[i]f the poet succeeded in doing it [communicating the authorial intent], then the poem itself shows what he was trying to do. And if the poet did not succeed, then the poem is not adequate evidence, and the critic must go outside the poem—for evidence of an intention that did not become effective in the poem” (Wimsatt & Beardsley, 1946, p. 1-2). This argument is directly translatable to games; if the game manages to communicate what the author intended, there should be no need for studying this intention. If the game fails in doing so, the researcher must go outside the game, as done by Mateas (2003) in his study of *Pac-Man* (Iwatani, 1980), who bases his investigation on interviews with *Pac-Man*’s creator, Iwatani, to find evidence of this intention. But the discussion of authorial intent is complicated further when considered in relation to games, as it can be difficult and sometimes impossible to define the author on a production team of several hundred people. Who is to encode the game object with meaning, and who can then serve as “evidence” when investigating a potentially failed implementation of this meaning? Is it the lead designer, who is responsible for the overall vision of the game, the level designer who designed the specific level of the game, the artist who did the artwork for this level of the game, or the programmers who implemented parts of the algorithms behind the specific level of the game? Scholars who study the intention of the ‘author’ tend to focus on games developed by a single person (Montfort & Bogost, 2008; Robinson et al., 2015; Wardrip-Fruin, 2009), which is most likely because of the difficulties involved in identifying an author in AAA productions. If the author can’t be defined, one cannot talk about the traditional notion of authorial intent, as known from literary theory.

In *The Death of the Author*, Barthes (1977) writes that “[...] it is language which speaks, not the author; to write is, through a prerequisite impersonality, [...] to reach that point where only language acts, ‘performs’, and not ‘me’” (Barthes, 1977, p. 143). The same can be argued for games where it is the game itself, including its hardware and software, interface, controller, and rule system, which speaks, acts, and performs, and not the ‘game artist’ or the ‘author’. This perspective suggests the study of games, as Foucault identifies, ‘works’ (Foucault, 1969, p. 207). When studying a text as a ‘work’, Foucault argues that “the task of criticism is not to bring out the work’s relationships with the author, nor to reconstruct through the text a thought or experience, but rather to analyze the work through its structure, its architecture, its intrinsic form, and the play of its internal relationships” (Foucault, 1969, p. 207).

Surprisingly enough, this seems to immediately align with the proceduralist school of thought, which is followed by scholars studying the source code of games, such as Mateas (2003), Wardrip-Fruin (2009), and Robinson et al. (2015); it is the game object itself, as a ‘work’, which speaks, and not its relationship to the author. However, Bogost argues that “[p]ersuasion is related to the player’s ability to see and understand the simulation author’s implicit or explicit claims about the logic of the situation represented” (Bogost, 2007, p. 333). In this, Bogost directly argues that the author has a relevant role, and that the persuasive power of a game is directly related to how the player understands the author in relation to the work. This is a complete contradiction to Foucault’s critique of authorial intent as well as his approach to texts as ‘works’. It therefore also makes sense that many of the scholars who build their arguments on the concept of procedural rhetoric tend to over-emphasise the role of the author in what may otherwise be understood as formal analyses, like Wardrip-Fruin’s (2009) study of *Façade* (2005), Mateas’ (2003) analysis of *Pac-Man* (1980), and Robinson et al.’s (2015) reading of *Passage*. They all focus on the author and his intent, in relation to how the game object is designed to convey meanings, and thus fall under, what Wimsatt and Beardsley call, ‘the intentional fallacy’ (Wimsatt &

Beardsley, 1946). This sort of focus on intent is old-fashioned and was abandoned in most fields quite a while ago. One can therefore wonder why it is still the dominant mode within source code analysis in game studies.

About *PASSAGE*

Passage is game designer Jason Rohrer’s third game, which was developed for Kokoromi’s curated GAMMA 256 event (Rohrer, 2007). The side-scrolling minimalistic game has an atypical narrow field of vision, where the player can only see limited horizontal “rows” of the map, although the world continues beyond what is immediately visible. The game consists of one level only which is procedurally generated, and which the player can decide to traverse either with an individual avatar or with a duo consisting of the avatar and a spouse. The spouse is activated when the player collides with the graphical representation of the spouse on the map. After the spouse has been picked up, narrow paths can no longer be traversed, and thus fewer points can be collected through collision with treasure chests (some of which contain valuables that are translated to points, while others contain something resembling flies or dirt). Points are earned by colliding with treasure chests and simply by progressing through the level, and while it is harder to gain points from chests when having picked up the spouse, this mode of play grants an additional point bonus, in the documentation referred to as the *explorer factor*.



Figure 1: Screenshot of *Passage* (2007)

When the game is started, the avatar is located to the far left of the screen, with a blurred part to the far right of the screen, which is revealed through play to be the remaining level. As the player progresses, the

avatar moves further to the right of the screen, all the while its graphical representation (and that of the spouse, if she is picked up) seems to age. Eventually the avatar will move slower, and if the spouse has been picked up she will transform into a gravestone. The avatar too will transform into a gravestone and the game will end after exactly 5 minutes, regardless of the space traversed during play.

APPROACHES TO *PASSAGE*

As previously stated, several scholars have studied *Passage*, all sharing the interest of how the game conveys meaning. Parker (2012) argues that *Passage* is the first prominent ‘artgame’, for the definition of which he emphasises identifiable author figures, as well as a specific ‘message’ which the player is to discover (ibid, p. 42). Although Parker argues that such characteristics are not mandatory for a game to qualify as an artgame, it is exactly the author and the intended message of *Passage* which he studies in his article. He identifies what I will later uncover as the spouse, the female-looking character that follows the player after colliding with her on the map, as a companion. This is linked to what Parker identifies as the autobiographical character of Rohrer’s games – Rohrer articulates in his creator statement that the game is based on his thoughts about life and death. However, Parker also notes the irony of the many readings of *Passage*, as Rohrer states that there is no right or wrong way of interpreting the procedurally generated game. This is somewhat contradicted by Rohrer’s presentation of his own intentions, that has, after being published in the creator statement, guided most readings of the game.

Another scholar who has engaged with *Passage* is Harrer (2013), who in an initial formal introduction of the game starts interpreting the symbolism of the executed game: “[r]unning into her triggers an animated heart that represents their falling in love” (Harrer, p. 616), she argues, acknowledging the existence of the creator statement, yet aiming her analysis at the symbolism and metaphors of the game, rather

than what Rohrer intended (or, at least, argues in his creator statement that he intended with the game). When Harrer discusses the game as an experiential metaphor, however, she leans on the creator statement, using Rohrer's quotes to enforce her point that the death of, what she (correlating with Rohrer's creator statement) terms the spouse comes, as a shock to the player.

At the DiGRA conference 2015, William Robinson, Michael Mateas, and Dylan Lederle-Ensign presented a reading of *Passage*. They argued for what they term a procedurally literate inspection (Robinson et al., 2015) in which processes are read as metaphors. Their approach is grounded in Bogost's theory of procedural rhetoric (Bogost, 2007), and follows the notion that meaning can be found in the game object itself. An author encodes this meaning and hence it should be studied in relation to the author's intentions. Therefore their study is based on Rohrer's creator statement, which has its limitations; Rohrer describes his intentions with the game, but does not go into details about the specific code and how it reflects the meanings that he wished to encode in the game. Uncovering the meanings inscribed by Rohrer in the source code becomes the mission for Robinson et al., who end up having to draw potential conclusions, as they do not have the necessary knowledge from the author to validate any of the results of their analysis, e.g. the goals of the game metaphorically relating to everyday trade-offs (Robinson et al., 2015, p. 3). It is exactly this problem Wimsatt and Beardsley (1946) refer to when they argue that the poem, or in this case the game, is not sufficient evidence in supporting any argument about the authorial intent. Although Robinson et al.'s reading is indeed interesting, it does not explore the full potential of the source code in relation to their metaphorical reading of the game. Instead, they conduct a metaphorical reading of the code itself, not directly related to the executed game, and one can therefore question the study's relevance for the study of the game artefact, often conceived of as the executed game itself.

All the readings briefly introduced above build, in one way or another, on Rohrer's creator statement, acknowledging his authorial intent as core

to an analysis of *Passage*. Parker's and Harrer's studies are focused only on the executed game, that is, that which is played and perceived by the player, and what is usually simply referred to as 'the game', while Robinson et al.'s study deals with the source code of the game. The aim is now to illustrate that similar interpretations can be made from a reading of the source code, rather than based on the creator statement. As such, the goal is to eliminate the notion of traditional authorial intent in the analysis, and thereby not studying Rohrer's creator statement as a paratext.

ANALYSIS

I will demonstrate, with *Passage* as an example, that we can analyse the source code in a meaningful way, and that the findings can be logically connected to interpretations of the executed game. When analysing the code we do not have to get involved with the intentional fallacy per se. If we acknowledge the executed game as second-order design, we must also accept the relevance of the source code as the mother-text, that which is actually designed, and thus it becomes meaningful for the study of the executed game. However, in this case one may understand the source code as an author itself, or as a type of creator statement, in which my initial distance to the notion of authorial intent becomes problematic. I will return to this problem in the discussion, but for now, I will conceive of the source code as a text between author and game, which may help us understand better the executed game itself.

Code offers many aspects and dimensions that can be analysed. For the sake of clarity and conciseness, I will focus the discussion in this paper on naming in the context of processes as well as processes, which constitute rules that are not necessarily clearly articulated in the executed game. Naming refers to the names of variables and methods in the code. These are given by the programmer, but most programming languages allow for meaningless combinations of letters to form the names (Deissenboeck & Pizka, 2006). Many programmers and scholars argue

for a set of unified rules that dictates exactly how one should name variables and methods, as this has a direct influence on the readability and in turn the overall program comprehension (ibid). Although there are no fixed rules for naming, there are some norms: there should be consistency in whatever method the programmer uses for naming, the names should be concise, and method names should, if possible, be formed following a verb-noun or verb-noun-noun structure (ibid). Naming can be seen as a part of the code aesthetics, and can therefore be studied in relation to program comprehension, however in the following analysis, I will search to make sense of method and variable names as parts of a formal analysis of video games. My argument is that much meaning can be interpreted from the code itself, and that much of this meaning may not be immediately evident in the executed game. As such, some of the things that are usually interpreted on an abstract and symbolic level in the traditional game analysis will be hardcoded into the game's source code through naming. I believe that this allows us to arrive at informed interpretations without turning to creator/author statements and other secondary sources in which the programmers and/or creators express their intent and meaning of the game. It should be noted, though, that it is of course possible for the designer to name variables freely and thus that variable names, like any other sign, must be interpreted in the context of the executed game. If variable names reflect certain ideologies, e.g. socialism, without these being in any way visible in the executed game, it does not mean that the game can or should be understood as a socialist game. Rather, the scholar must explore the relation between the variable names and the executed game, and she may even find that there is no apparent connection between the two. Yet, as the source code is a part of the formal game object, it can (and possibly should) be understood in relation to the game as a work – something I will return to in the discussion. This also means that two different source codes, which produce the same executed game, must be considered as two different works.

As with any other game example, large parts of *Passage*'s code are not relevant to this investigation. The few lines that are useful for the

analysis have been found by playing through the game, interpreting symbolism and metaphors, and returning to the code to see if any of this is spelled out in the code. Moreover, as I will present below, I attempted to compare my findings to Rohrer’s creator statement to see how it relates to my findings. This is not to argue against my previous statement that authorial intent in some cases is unconstructive – rather it is to prove that some of the interpreted meanings of a game can be found in the code itself and do not depend on any communication with the “author” or “creator”. It should be noted that the source code to *Passage* is somewhat difficult to access¹. The game has a built-in script, which links and compiles various files together, rather than a traditional set-up with one folder containing the various classes. I have therefore only investigated `Game.cpp`, containing 1300 lines of game logic code, which makes calls to various other scripts, for example, graphics, sound, etc.

```

945
946     if( isPlayerDead() ) {
947         // stop moving
948         moveDelta = 0;
949     }
950

```

Figure 2 – Excerpt from *Passage* (2007), line 946-949 in `Game.cpp`

```

1166
1167     if( age >= 0.85 ) {
1168         dieSpouse();
1169     }
1170     if( age >= 0.95 ) {
1171         diePlayer();
1172     }
1173

```

Figure 3 – Excerpt from *Passage* (2007), line 1167-1172 in `Game.cpp`

1. I owe thanks to Dylan Lederle-Ensign, who provided valuable hints for navigating *Passage*’s file structure.

When the game is played, the player will find that the avatar changes graphically, indicating aging. At some point, the avatar will turn from being a graphical representation of a human to being a graphical representation of a gravestone, as pointed out by Harrer (2013). This kind of signification is unambiguous to many, yet the example above illustrates how it is also evident in the source code—what we as players interpret from the symbolism of the gravestone as death of the avatar is clearly written in the script as death of the player, which will make the avatar stop moving. Figure 3 illustrates how both spouse and player (avatar) will die when reaching a specific age, calculated based on the time played – that is, even if the player does not move the avatar around, it will age, and eventually die when its age value reaches 0.95, an arbitrary number which does not necessarily refer to the actual age of 95 years. The two examples above serve as examples of how code reading in the analysis can support arguments of interpretations and contribute with new meanings. It also illustrates a strong relationship between player and avatar, which could be interpreted as if there is no character in the game, but only an avatar, which is meant as a graphical representation of the player and is not articulated as a manifestation of Rohrer himself. The example above also reveals that the gameworld does not end as such, but that the avatar turns into a gravestone and stops moving once dead. This is articulated in Rohrer's (2007) creator statement, where he writes that "[...] even if you spent your entire lifetime exploring, you'd never have a chance to see everything that there is to see" (ibid, paragraph 8). However, the code makes that visible to us (also articulated in the map generation script), hence we do not need the creator statement to figure that out. The meaning of being in an infinite world, where you will not have enough time to explore everything is to be interpreted by the scholar, if she wishes to do so, but the potential endlessness of the graphics, and the fact that not all can be seen, is hard-coded in the source code itself, and so is the length of the avatar's life, emphasising the player's lack of autonomy, both in the game as well as metaphorically in life.

```

950
951     if( knowSpouse && isSpouseDead() ) {
952
953         // player moves slower
954         // toggle motion on this frame
955         movingThisFrame = ( frameCount % 2 == 0 );
956     }

```

Figure 4 – Excerpt from *Passage* (2007), line 951-956 in *Game.cpp*

This second example illustrates how the 8×8-pixel human, which follows the player once the player, collides with its graphical representation, triggering a heart animation (see fig. 5 below), is presented as a spouse. This is something, which the executed game never articulates, but which Rohrer explains in his creator statement. Parker (2012) interprets the spouse as a companion, whereas Harrer (2013), possibly influenced by the creator statement, uses the same term as Rohrer, namely spouse. It is possible for the player to interpret the human companion as a spouse, a wife, a friend, a companion, or whatever she wishes, but it is stated in the code that this being is the spouse. This means that the scholar should, when studying the source code as a part of the formal analysis, consider the meaning of the term ‘spouse’ in relation to the graphical representation, to explore how the variable name can inform the interpretation in question. Moreover, the code example shows how the death of the spouse will result in slower movement of the avatar. This decrease in speed is only activated if the player picks up the spouse and she dies, and therefore the player will not be slowed down if she decides not to pick up the spouse. This is something that Rohrer explains in his creator statement, but which is articulated as a process in the source code, and thus an example of how rules, which may not be immediately clear in the executed game, can be better understood by looking into the code.

```

1202
1203     if( ! haveMetSpouse() &&
1204         ! isSpouseDead() &&
1205         distanceFromSpouse < 10 ) {
1206
1207         meetSpouse();
1208
1209         knowSpouse = true;
1210
1211         startHeartAnimation(
1212             (int)( ( spouseX - playerX ) / 2 + playerX ),
1213             (int)( ( spouseY - playerY ) / 2 + playerY ) - 2 );
1214     }
1215

```

Figure 5 – Excerpt from *Passage* (2007), line 1203-1214 in *Game.cpp*

The code excerpt in fig. 5 shows that the player can only ever have one spouse during a play-through, as the heart animation, which is triggered when colliding with the spouse and picking her up, is only generated if the player has not yet met the spouse, the spouse is not dead, and the spouse is not next to the player (that is, the spouse is not currently active). That also means that the game only ever generates *one* instance of the spouse per play-through. This is never commented upon in the creator statement, but can indeed inform the formal analysis of the game, as monogamous, heteronormative standards are hardcoded into the game. Depending on the reading, one might even argue that this conveys that there is only *one* right person for you in the world. This specific example illustrates how an analysis of the source code can not only exclude the use of creator statements and interviews, but also contribute to the analysis of games in new and meaningful ways.

```

1240
1241     if( haveMetSpouse() ) {
1242         // show explore score contribution in jumps
1243         exploreScore =
1244             ( exploreScore / spouseExploreFactor )
1245             * spouseExploreFactor;
1246         // note:
1247         // this can cause our score to go down (to the previous
1248         // jump) as we transition from not having a spouse to
1249         // having one.
1250         // we fix this below with maxExploreScore
1251     }

```

Figure 6 – Excerpt from *Passage* (2007), line 1241-1251 in *Game.cpp*

```

1003
1004     if( getKeyDown( SDLK_LEFT ) || getJoyPushed( SDL_HAT_LEFT ) ) {
1005         char notBlocked =
1006             !isBlocked( (int)( playerX - moveDelta ), (int)playerY );
1007
1008         // spouse and character move, and are blocked, together
1009         if( haveMetSpouse() &&
1010             isBlocked( spouseX - moveDelta, spouseY ) ) {
1011             notBlocked = false;
1012         }
1013

```

Figure 7 – Excerpt from *Passage* (2007), line 1004-1012 in *Game.cpp*

The fifth example (fig. 6) from the source code of *Passage* shows how points are calculated differently if the player picks up the spouse. A certain “spouse explorer factor” (which is previously given the value of 2 in the code) determines exactly how the overall explorer points are calculated. The score will always be twice as high with the spouse and her explorer factor than without her. Along with the way the spouse blocks your possibilities of navigation on the map, as illustrated in the code in fig. 7, this creates a situation where there are points to be gained both with and without the company of the spouse. Rohrer too accounts for this in the creator statement, but rather than commenting on the meaning of this way of collecting explorer points, he presents the scoring-system as a part of the formal rule-system of the game. Yet again, this proves that the creator statement is not needed to make many of these conclusions.

DISCUSSION

As can be seen in the analysis, I have found different ways in which the source code is useful for a formal analysis of the game. The most crucial way in which source code analysis facilitates more in-depth understanding is how it can help the scholar uncover dimensions of the game object, which are not necessarily visible in the executed game. This is illustrated in the examples presented above, and as noted in the analysis, these cases fall under two categories: 1) cases in which the

specific variable or method name reveals information about the game object and its potential representations on the interface, and 2) examples that show how specific implementations of procedures establish rules in the game that cannot necessarily be seen in the executed game. The first category can support interpretations of the executed game in the sense that it contributes to an understanding of metaphors and symbols, as the naming of the variable or method may help the scholar to unravel a potential reading of the game. A good example is the name of the spouse; not only does this naming clarify our understanding of the companion-like pick-up, it also guides further readings of the code where the companion-as-spouse contributes to deeper readings, such as the idea that the only-once-generated and picked-up spouse may reflect a certain sense of heteronormativity. This method can be useful in analyses where the symbolism is especially ambiguous and hard to interpret. Moreover, it enforces a focus on games as second-order design – that which is designed by an author is not the executed game but the source code. Hence, it is fruitful to study whether there is a correlation between interpreted messages and meaning in the executed game as well as in the source code. This, I believe, is especially true if we wish to isolate the analysis from the author’s intentions, goals, “points”, etc., as it allows us to answer the question of whether any or all of the two levels of the game that can be studied formally appear to communicate a specific message or can be attributed a specific meaning. Yet, as previously argued, the source code itself can be understood as an author, which influences how we dare interpreting the executed game. This creates a new paradox of an intentional fallacy, where the scholar must explore the relationship between code and executed game to assess whether variable names are at all worthwhile or reliable to study in the formal analysis.

In the second category, the source code is used to get a perfect understanding of the system structure and it draws some resemblance to the fan practice of theorycrafting. However, whereas variable names can be understood as a type of pseudo-representation, the rules constituted by processes do not signify anything in themselves. Only when understood in relation to the executed, playable game they gain meanings, as they

constitute the borders of play. Because these rules are not necessarily visible in the executed game, they raise the question of whether they, and the whole of the source code, can truly be understood as a part of the 'work' of the game, of whether it is simply another form of paratext that can be explored similarly to author/creator statements.

The Foucauldian meaning of the 'work' emphasises an analysis of the structure, architecture, intrinsic form, and internal relationships of the work itself, rather than of its relationship to the author (Foucault, 1969). The analyses found in this paper do indeed study the structure of the game, which can be perceived more structurally and numerically in the code than in the executed program. Moreover, the source code facilitates an exploration of the internal architecture of the game, and not just that which is represented when executed and played. All of this relates to Foucault's definitions of what constitutes a 'work'. However, the source code is not the executed game object. We have to accept that we are, when working with source code analysis as a part of a formal game analysis, working with different texts. The relationship between these texts can be understood in various ways; the source code can be seen as the mother-text and the executed game as a text designed by its 'parent-text'. The executed game can be seen as the main text, whereas the source code can take on the role as another text related to the main text, e.g. as a hypertext or paratext. The source code itself can be understood as several texts, as the source code consists of respectively, code and comments, which may be understood as separate texts, which are ontologically different. With the code as a hypertext, the analysis can explore the executed game as a subsequent text to the source code. This would indicate that the executed game is not authored as a part of the source code, but that their relation is influenced by, among other things, the compilation and execution of the program. The many complicated ways in which we can understand the relations between code, executed program, and player have been studied in depth by Aarseth (1997). He suggests the concept of cybertext, which prioritises the influence of the medium on the dynamics of scriptons (defined as strings as they appear to the reader) (ibid, p. 62-63). Other scholars have searched to

make sense of the source code's place in the text/paratext relationship (Desrochers, 2014). In relation to the work conducted for this paper I will argue that all approaches seem somehow productive, yet they all pose a question of authorship, and create a paradox of how to dismiss the notion of the intentional fallacy. If the source code is seen as a paratext, it does not solve any problems of authorial intentions; rather it facilitates further discussion of authorial intent understood as authoring of the code or the authoring of the executed game, and whether we can talk about one or several individual authors, or one heuristic author. As a paratext, the code is only as relevant for the formal analysis of the game as an author statement or wiki page, because of its distanced relationship to the text or executed game in question.

Neither hypotext, cybertext, nor paratext may be the right ways to make sense of the relationship between the game and its code, and hence what status the source code should have in the formal analysis. However, I believe that the discussion of source code as a text illustrates that more research is still needed to point out exactly how source code analysis can be situated as a method in game studies. I also believe that I have demonstrated how such readings of the code can inform the formal analysis. The next step must be to unravel how a full integration of the method for a comprehensive game analysis contributes to the academic work. This should be followed not as much by a specific study but rather by a discussion of the relations between code, game, and everything in between.

Compared to other readings of *Passage*, I believe that the analysis of the source code is indeed a valuable way of studying several dimensions of the game object. I have illustrated that it allows us to consider elements that contribute to an understanding of 'message' or 'meaning', without engaging with creator statements or other traditional authorial documents. As such, it is possible, at least to some degree, to focus on the game object itself, rather than intentions of the authors, which allows for a more formal analysis. The source code analysis may not give us more information than the author statement would, yet it will be a

different type of information, which can exclude the use of second-hand references, such as the author statement. However, as previously pointed out in the discussion, the source code consists of comments as well as code, and the author can thus still express intentions through comments and variable naming. It is therefore necessary to further study exactly how we can understand the source code as a text, or several texts, in relation to the executed game, and in turn how the source code can be understood as different from author statements.

CONCLUSION

This paper has illustrated how source code analysis can serve as a tool for a formal game analysis. By analysing the source code of *Passage*, I have identified two ways by which such an analysis proves useful. First, the variable or method names can reveal information about the game object and its representations in the executed game, which supports an analysis of symbolism and metaphors. Second, the code can contain processes, which are not necessarily visible in the executed game. Exploring these processes can be likened to practices of theorycrafting, as it helps us better understand the system structure of the code and hence the game. Both ways of exploring the source code can be applied in the traditional formal game analysis and contributes with new meanings.

I believe that the study proves that a reading of the source code is useful for a comprehensive analysis of a game, and that it may help avoid the intentional fallacy of prioritising author statements over close analysis of the text. However, we must methodologically understand the approach in relation to the game object, that is, explore exactly how we can understand the code in relation to the executed game. Moreover, in order to justify how source code analysis can avoid the intentional fallacy, we must study in depth whether game designers and programmers can be understood as heuristic authors, whether we have to accept the author as an individual, at least for cases where the game is made by one person,

or if there is a third, advantageous way of conceptualising the author(s) of video games. Until then, source code analysis poses some ontological challenges to the understanding of games as ‘works’.

BIBLIOGRAPHY

Aarseth, E. J. (1997): *Cybertext: perspectives on ergodic literature*. Baltimore: JHU Press.

Barthes, R. (1977): *Image, Music, Text*. London: Fontana Press.

Bogost, I. (2007): *Persuasive games: The expressive power of videogames*. Cambridge: MIT Press.

Buckles, M. A. (1985): *Interactive Fiction: The Computer Storygame Adventure*. Doctoral Dissertation, University of California, San Diego.

Crowther, W. & Woods, D. (1977): *Colossal Cave Adventure*. [PC/Unix]

Deissenboeck, F., & Pizka, M. (2006): Concise and consistent naming. In *Software Quality Journal*, 14(3), pp. 261-282.

Desrochers, N. (2014): *Examining Paratextual Theory and its Applications in Digital Culture*. Hershey: IGI Global.

Foucault, M. (1969): What is an author. In *Aesthetics, method, and epistemology* (Vol. 2), ed. by Faubion, J.D., 1998. New York: The New Press

Harrer, S. (2013). From Losing to Loss: Exploring the Expressive Capacities of Videogames Beyond Death as Failure. In *Culture Unbound: Journal of Current Cultural Research*, 5(4), pp. 607-620.

Iwatani (1980). *Pac-Man*. Tōru Iwatani/Namco.

Konzack, L. (2002): Computer Game Criticism: A Method for Computer Game Analysis. In *Proceedings of Computer Games and Digital Cultures Conference*.

Lipkin, N. (2012): Examining Indie's Independence: The Meaning of "Indie" Games, the Politics of Production, and Mainstream Co-optation. In *Loading... The Journal of the Canadian Game Studies Association*, 7(11).

Mateas, M. (2003): Expressive AI: Games and Artificial Intelligence. In *Proceedings of Level Up: DiGRA 2003*.

Montfort, N., & Bogost, I. (2009): *Racing the beam: The Atari video computer system*. Cambridge: MIT Press.

Parker, F. (2012). An Art World for Artgames. In *Loading... The Journal of the Canadian Game Studies Association*, 7(11).

Procedural Arts (2005). *Façade*. [PC] accessed 09.12.16 at <http://www.interactivestory.net/>

Robinson, W., Lederle-Ensign, D., & Mateas, M. (2015): Procedural Deformation and the Close Playing/Reading of Code: An Analysis of Jason Rohrer's Code in *Passage*. Abstract from *DiGRA 2015: Diversity of Play*.

Rohrer, J. (2007): *Passage*. [PC] accessed 20.01.16 at <http://hcsoftware.sourceforge.net/passage/>

Rohrer, J. (2007): *What I was trying to do with Passage*. Web-post, published 2007, Potsdam, NY, accessed 03.12.15 at <http://hcsoftware.sourceforge.net/passage/statement.html>

Treanor, M., & Mateas, M. (2013). An Account of Proceduralist Meaning. In *Proceedings of the 6th International Conference of the Digital Research Association*.

Wardrip-Fruin, N. (2009): *Expressive Processing: Digital fictions, computer games, and software studies*. Cambridge: MIT press.

Wimsatt, W. K., & Beardsley, M. C. (1946): The Intentional Fallacy. In *The Sewanee Review* 54 (3), pp. 468-488.

Contributors

Kati Alha

University of Tampere, Game Research Lab
kati.alha@uta.fi

Chris Bateman

University of Bolton

Steve Benford

The Mixed Reality Lab
University of Nottingham
Jubilee Campus, Nottingham NG8 1BB, United Kingdom
steve.benford@nottingham.ac.uk

Paul Formosa

Department of Philosophy
Macquarie University
NSW Australia
paul.formosa@mq.edu.au

Mathias Fuchs

Institute of Culture and Aesthetics of Digital Media
Leuphana University/ Germany
Scharnhorststraße 1 21335 Lüneburg
mathias.fuchs@creativegames.org.uk

Dayna Galloway

Abertay University
Bell Street Dundee, DD1 1HG
d.galloway@abertay.ac.uk

Hannu Korhonen

University of Tampere, Tampere Unit for Computer-Human Interaction
hannu.juhani.korhonen@uta.fi

Orion Mavridou

University of Abertay
Bell St. Dundee, Scotland 01382308000
o.mavridou@abertay.ac.uk

Janne Paavilainen

University of Tampere, Game Research Lab
Kanslerinrinne 1 FI-33014 Tampere,
Finland +358 400 473 650
janne.paavilainen@uta.fi

Lynn Parker

Abertay University
Bell Street Dundee, DD1 1HG
l.parker@abertay.ac.uk

Tom Rodden

The Mixed Reality Lab
University of Nottingham
Jubilee Campus, Nottingham NG8 1BB, United Kingdom
tom.rodden@nottingham.ac.uk

Malcolm Ryan

Department of Computing
Macquarie University
NSW Australia
malcolm.ryan@mq.edu.au

Dan Staines

Department of Communication Studies
Concordia University

Montreal, Canada
dan.staines@concordia.ca

Richard Wetzel

School of Computer Science
University of Lincoln
Brayford Pool, Lincoln, LN6 7TS
rwetzel@lincoln.ac.uk

Ea Christina Willumsen

Department of Information Science and Media Studies
University of Bergen Norway
ea.willumsen@uib.no

About ToDiGRA

Transactions of the Digital Games Research Association (ToDiGRA) is a quarterly, international, open access, refereed, multidisciplinary journal dedicated to research on and practice in all aspects of games.

ToDiGRA captures the wide variety of research within the game studies community combining, for example, humane science with sociology, technology with design, and empirics with theory. As such, the journal provides a forum for communication among experts from different disciplines in game studies such as education, computer science, psychology, media and communication studies, design, anthropology, sociology, and business. ToDiGRA is sponsored by the Digital Games Research Association (DiGRA), the leading international professional society for academics and professionals seeking to advance the study and understanding of digital games.

Further information on DiGRA is available at <http://www.digra.org>

Further information on ToDiGRA is available at <http://todigra.org>

About the ETC Press

ETC Press is a Carnegie Mellon publishing imprint with a twist. We publish books, but we're also interested in the participatory future of content creation across multiple media. We are an academic, open source, multimedia, publishing imprint affiliated with the Entertainment Technology Center (ETC) at Carnegie Mellon University (CMU) and in partnership with Lulu.com. ETC Press has an affiliation with the Institute for the Future of the Book and MediaCommons, sharing in the exploration of the evolution of discourse. ETC Press also has an agreement with the Association for Computing Machinery (ACM) to place ETC Press publications in the ACM Digital Library.

ETC Press publications will focus on issues revolving around entertainment technologies as they are applied across a variety of fields. We are looking to develop a range of texts and media that are innovative and insightful. We are interested in creating projects with Sophie and with In Media Res, and we will accept submissions and publish work in a variety of media (textual, electronic, digital, etc.), and we work with The Game Crafter to produce tabletop games.

Authors publishing with ETC Press retain ownership of their intellectual property. ETC Press publishes a version of the text with author permission and ETC Press publications will be released under one of two Creative Commons licenses:

- **Attribution-NoDerivativeWorks-NonCommercial:** This license allows for published works to remain intact, but versions can be created.
- **Attribution-NonCommercial-ShareAlike:** This license allows for authors to retain editorial control of their creations while also encouraging readers to collaboratively rewrite content.

Every text is available for free download, and we price our titles as inexpensively as possible, because we want people to have access to them. We're most interested in the sharing and spreading of ideas.

This is definitely an experiment in the notion of publishing, and we invite people to participate. We are exploring what it means to "publish" across multiple media and multiple versions. We believe this is the future of publication, bridging virtual and physical media with fluid versions of publications as well as enabling the creative blurring of what constitutes reading and writing.

<http://www.etc.cmu.edu/etcpres/wellplayed>

Twitter: @etcwellplayed