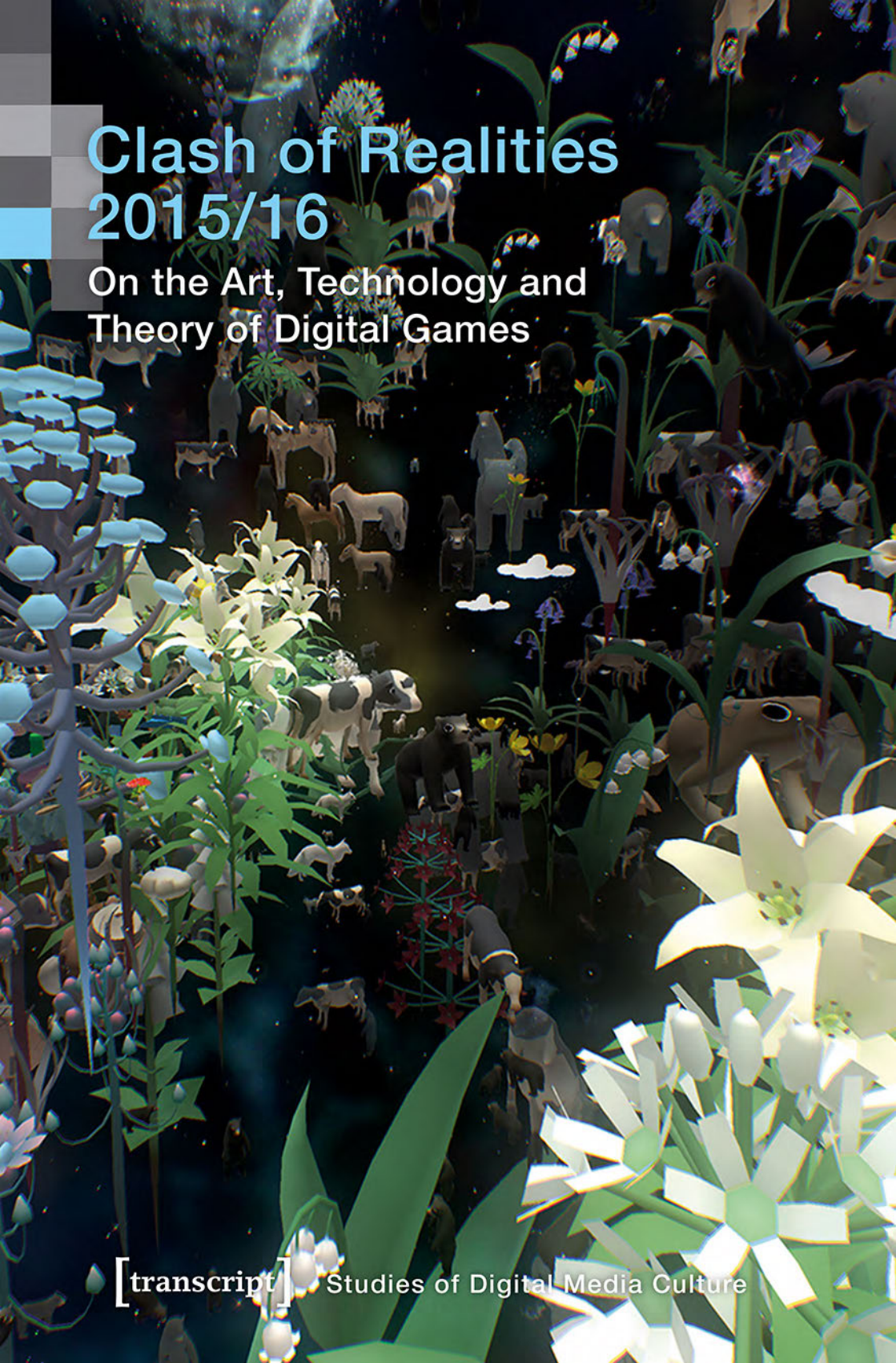
Clash of Realities
2015/16
On the Art, Technology and
Theory of Digital Games
[transcript]
Studies of Digital Media Culture

Clash of Realities (ed.)
Clash of Realities 2015/16

Studies of Digital Media Culture | Volume 5

The series is edited by Gundolf S. Freyermuth and Lisa Gotto.

The **Clash of Realities – International Conference on the Art, Technology and Theory of Digital Games** takes place at the TH Köln, University of Technology, Arts, and Sciences in Cologne, Germany. Unique in Europe, this research conference brings together academics and artists for an interdisciplinary exchange and dialogue. The conference is jointly organized by the "Cologne Game Lab" and the "Institut für Medienforschung and Medienpädagogik" (both of TH Köln), the "ifs internationale filmschule köln," the "Institut für Medienkultur und Theater" of the University of Cologne, and "Electronic Arts," a global leader in the field of digital interactive entertainment.

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Proceedings of the 6th and 7th Conference

[transcript]

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Inhalt

II.2 MEDIA PEDAGOGY AND MEDIA ETHICS SUMMIT

II.3 Film and Games Summit

II.4 Game Development Summit

II.5 Games Preservation Summit

Preface

PROGRAM BOARD OF THE *CLASH OF REALITIES CONFERENCE*

In 2015 and 2016, *Clash of Realities —The International Conference on the Art, Technology, and Theory of Digital Games* took place in Cologne for the sixth and seventh time. At the center of Europe's premier artistic-academic research conference lie questions concerning the aesthetic development, theoretical analysis, and cultural mediation of digital games. Conference guests included scholars from the humanities, social scientists, specialists in education, game developers of all kinds—from AAA companies to Indie start-ups—, up-and-coming creative talent, students, and all those interested in and excited by digital games.

This volume features the best of the many lectures given at *Clash of Realities* 2015 and 2016.

The year 2015 marked a fresh start for *Clash of Realities*. Founded as a biannual event in 2006 by Winfred Kaminski of the *Institute for Media Research and Media Pedagogy* at the Cologne University of Applied Sciences, and Martin Lorber of *Electronic Arts Germany*, the conference set out to redress the lack of an interdisciplinary forum on digital games in Germany and Europe. The premier goal was to facilitate and stimulate academic debates on pedagogical, psychological, sociological, and cultural aspects of digital gaming. However, from its beginning, the conference also aspired to be a place for communication among academia, politics, media, and other relevant stakeholders in the area of digital games.[1]

In 2010, Björn Bartholdy and Gundolf S. Freyermuth of the then-recently founded *Cologne Game Lab* of the Cologne University of Applied Sciences joined the conference board and started to organize a new track dedicated to

1 The political significance was underlined by the fact that the first conference in 2006 was opened by Armin Laschet, then Minister for Intergenerational Affairs, Family, Women, and Integration, today the State Premier of North-Rhine Westphalia.

Game Development and Game Studies. The five bi-annual conferences between 2006 and 2014 were documented in the publication of proceedings.[2]

In 2015, after Kaminski's retirement, Barthold and Freyermuth took over the organization of the conference and restructured it. The perspective and orientation were widened to include academics and artists from more specializations. Additional partners were recruited, specifically the *ifs internationale filmschule köln* (international film school Cologne) and the *Institut für Medienkultur und Theater* (Institute for Media Culture and Theater) at the University of Cologne.

As a consequence of the expanded function of the conference as an interface of academic research and artistic creation, a new structure was implemented. The conference now consists of a Summit Day facilitating specialized discussions in smaller and more homogeneous groups, and a Main Day encouraging heterogeneous exchange among the different academic specializations concerning themselves with digital games and, most importantly, between academics and artists.

This volume documents Main Day keynotes and lectures of five summits:

- *Game Studies Summit*: Organized by the *Cologne Game Lab* and the *Institute for Media Culture and Theater*, this summit concerns itself with the analytical and critical interpretation of digital games from the perspective of the humanities, specifically of media and cultural studies. As digital games shape our self-perception as well as our perception of the world around us, the emerging new field of Game Studies requires an emphasis on the investigation and promotion of games literacy. In 2015, Benjamin Beil and Gundolf S. Freyermuth curated the summit; in 2016, Benjamin Beil, Gundolf S. Freyermuth, and Hanns Christian Schmidt led the proceedings.
- *Media Pedagogy and Media Ethics Summit*: Organized by the *Institute for Media Research and Media Pedagogy* in cooperation with *Electronic Arts Germany*, this summit aims to discuss a broad spectrum of subjects related to

2 Kaminski, Winfred/Lorber, Martin (eds.): *Computerspiele und soziale Wirklichkeit*. Munich: kopaed, 2006; Kaminski, Winfred/Lorber, Martin (eds.): *Clash of Realities 2008 – Spielen in digitalen Welten*, Munich: kopaed, 2008; Kaminski, Winfred/ Lorber, Martin (eds.): *Clash of Realities 2010: Computerspiele: Medien und mehr*, Munich: Kopaed 2010; Kaminski, Winfred/Lorber, Martin (eds.): *Gamebased Learning – Clash of Realities 2012*, Munich: Kopaed 2010; Kaminski, Winfred/Lorber, Martin (eds.): *Spielwelt – Weltspiel. Narration, Interaktion und Kooperation im Computerspiel – Clash of Realities 2014*, Munich: Kopaed 2014.

the application of digital games in educational contexts. A particular focus highlights ethical questions, such as the presentation of characters, conflicts and conflict resolutions as well as a critical review of the communication culture in player communities. In 2015, Isabel Zorn, Martin Lorber and Jürgen Sleegers curated the summit. In 2016, Angela Tillmann, Martin Lober and André Weßel led the proceedings.

- *Film and Games Summit*: Organized by *ifs internationale filmschule köln*, this summit explores visual regimes and modes of perception, particularly in regards to the relation between film and digital games. In accordance with current developments in screen culture, as well as with theoretical debates engaged within these changes, the focus lies on converging media aesthetics as well as dynamically evolving media synergies. The summit was curated by Csongor Baranyai in 2015, by Lisa Gotto in 2016.
- *Game Development Summit*: Organized by the *Cologne Game Lab*, this summit focuses on the practice of making games by presenting concrete showcases of development processes along with critical reflection. Speakers at this summit range from representatives of the game industry (from AAA and Indie) to academic researchers to specialists from relevant fields. In 2015, Björn Bartholdy and Katharina Tillmanns curated the summit; in 2016, Björn Bartholdy and Krystian Majewski.
- *Games Preservation Summit*: Organized by *Electronic Arts Germany*, this summit concerns itself with the current state and future of games preservation, particularly with comprehensive and systematic efforts for the preservation of digital games and the many challenges preservation is facing, ranging from technical to methodical to legal questions and issues. In 2016, Martin Lorber and Fabian Weichert curated this summit.

ACKNOWLEDGMENTS

Conference

The sixth and seventh *Clash of Realities Conferences* took place at the *Cologne Game Lab* (CGL) of TH Köln and the *ifs internationale filmschule köln*, in 2015 from Monday, November 2, through Wednesday, November 5, 2015; in 2016 from Monday, November 14, through Wednesday, November 16. Both conferences were planned and designed by a Program Board, which was chaired by Björn Bartholdy and Gundolf S. Freyermuth of CGL. Members of the Program Board included Angela Tillman, André Weßel, and Isabel Zorn of the *Institute*

for Media Research and Media Pedagogy, Csongor Baranyai, Lisa Gotto, Sunedria Nicholls-Gärtner, and Simone Stewens of *ifs internationale filmschule köln*, Benjamin Beil and Hanns Christian Schmidt of the *Institute for Media Culture and Theater*, and Martin Lorber of *Electronic Arts Germany*.

The conferences were made possible by the generous support of TH Köln, *Film and Medien Stiftung NRW*, the City of Cologne, *Ford Motor Company*, and *Electronic Arts Germany*. Our sincerest thanks go to these institutions and companies.

The conferences owe much of their success to the extraordinary staff that helped organize and promote the events, in particular to Judith Ruzicka and Katharina Klimek of CGL, and the many members of CGL student support groups as well as to Mathias Mehr (CGL) for providing technical assistance and to Judith Neumann (CGL), Miriam Edinger and Uljana Thaetner (ifs), Sybille Fuhrmann and Petra Schmidt-Bentum (TH Köln), and Martin Lorber (EA) for the continuous press work. Katharina Tillmanns (CGL) moderated both conference Main Days with intelligence and wit.

The Program Board owes the deepest debt of gratitude, however, to the international speakers and presenters—more than a hundred academics and artists from over a dozen countries.

Speakers and organizers of the Clash of Realities Conference *(2016)*

Final minutes of the 7th Clash of Realities Conference *(2016)*

Publication

Initial author support, editing and formatting as well as final approval was provided by the heads of each summit. Curtis L. Maughan (CGL) tirelessly edited and proofread most of the contributions. Carmen Schneidereit (CGL) produced the layout. She was assisted by the publication work group of CGL students, David Kade (ifs), and Judith Ruzicka (CGL). The editorial process was supervised and managed by Gundolf S. Freyermuth. We thank them all for their help.

Last but not least, we would like to thank the TH Köln for supporting the publication of this book.

I Keynotes

Clash at *Clash of Realities*

ERIC ZIMMERMAN

When I was asked to put together a talk for the *Clash of Realities Conference*, I wanted to do something that did justice to the idea of a "clash." So I gave myself this design problem: put together a session that could serve as a forum for discussion and debate across disciplinary lines. In other words, I didn't just want to talk about realities clashing, but I wanted to try and see if I could actually get some real clashing to happen.

This short essay outlines what I did to engineer a clash of ideas onstage. The procedures I used can easily be ported to other conference contexts—please feel free to use this approach for your own events!

1. RAW MATERIAL

Just putting people in front of an audience and giving them discussion topics wasn't going to be enough—in my experience as a game designer, creativity emerges out of constraints. I wanted to design a procedure that would help structure and focus the conversation.

Taking the online conference proceedings as my raw material, I extracted all of the interesting nouns and noun phrases that I could find. For example, from this talk abstract by game scholar Emma Witkowski:

***Smack talk*, teamwork, and *playing for keeps*: weighing in on some *bodies that matter* in the serious pursuit of E-sports**

"The past 5 years have seen eSports explode into legacy sport spaces and conversations: *traditional sports celebrities* are investing in established franchises, major eSports competitions draw six-figure prize pools and reach *millions of viewers*, and *sports media broad-*

casting has gotten on board with *ESPN* even launching an online vertical dedicated to eSports. These recent headlines are fascinating marks on *the history of eSports*. Such sway from legacy sports, tied to *ongoing community support*, and the staging of eSports will certainly come to affect how we—the fans—can engage with *competitive computer gameplay*/players. But just as importantly, a deeper consideration of how players and teams do *professional play* is brought on by such growth. This talk will address *the changing eSports ecosystem from the perspective of players* and the liveliness of their practice—how they play, how they think of performance, and what it means for them to play to win."[1]

I extracted the following (highlighted above):

smack talk
teamwork
playing for keeps
bodies that matter

Figure 1: Eric Zimmerman during his opening keynote of the Clash of Realities Conference *at the Cologne Game Lab, November 2016*

1 See Emma Witkowski's paper "Bodies That Matter in the Pursuit of Esports," in this volume pp. 423-445.

traditional sports celebrities
millions of viewers
sports media broadcasting
ESPN
the history of eSports
ongoing community support
competitive computer gameplay
professional play
the changing eSports ecosystem
the perspective of players

While that list is fairly coherent (because it is all coming from the same paragraph), taking text from the dozens of different conference presentations resulted in a wild linguistic mix that was somehow also a core sample of the ideas and interests of the conference itself. Here's a random list:

our leisure time
a dynamic system
unsuspecting tourists
friendships and social support
fans
cultural heritage

Figure 2: Eric Zimmerman explaining his Clash of Ideas Game, November 2016

(digital) rights
capitalist production
the crazy idea that we can all get along
otherness
complex logical thinking
time
a mummified goat
learning environments
narrative
single-player games
crowdfunded open development
Guy Debord and the Situationists
the LEGO Star Wars series of videogames
an emotional experience

As I curated these words, one important constraint was to only use text verbatim—exactly as it had been presented in the online program. I gathered several hundred phrases and hand-wrote each of them onto a blank white card.

Figure 3: Game Cards from the Clash of Ideas Game

2. BLANKS TO FILL

To serve as vessels for this salad of signifiers, I came up with several statements that could take advantage of the card content, riffing off of the main themes of the conference itself. For example:

Nostalgia.
When we were children, we always wanted _____.
But then why as adults do we end up thinking we need _____?

You can imagine the possibilities:

*When we were children, we always wanted **friendships and social support**.*
*But then why as adults do we end up thinking we need **single-player games**?*

*When we were children, we always wanted **an emotional experience**.*
*But then why as adults do we end up thinking we need **Guy Debord and the Situationists**?*

My other prepared questions included the following, all of which I created as slides to be projected onstage.

Figure 4: The audience playing the Clash of Ideas Game

Change the game.
What do we all hate about games? _____.
What can we do about it? _____.

People.
Like it or not, humans are drawn to _____.
That's why we need more games that can engage with _____.

Living in the future.
The future is already here. Just look at _____.
Games can adapt by relying on _____.

In putting these Mad Libs-style blanks together, my main goal was to make sure that everything could fit together grammatically. I was building a modular system of linguistic units—and LEGO bricks just don't work if you can't actually stack them together.

But I had other discursive strategies as well. I wanted some of the questions to point directly towards the topics of the conference. And I wanted other questions to use the extracted words to take us into new terrain. The two parts of each question usually create some kind of opposition or contrast. But it was left ambiguous if the discussion was about something positive or negative.

Like it or not, humans are drawn to ***formal analysis.***
Like it or not, humans are drawn to ***war.***
Like it or not, humans are drawn to ***the virtual spaces of videogames.***
Like it or not, humans are drawn to ***Pokémon Go.***

That's why we need more games that can engage with ***cinema.***
That's why we need more games that can engage with ***multiple planes of reality.***
That's why we need more games that can engage with ***our brains.***
That's why we need more games that can engage with ***life.***

I did quick tests with the cards and the statements, refining the language and weeding out cards that just didn't play well. After several rounds of playtesting and editing, there seemed to be a lot of room for surprise, humor, and genuinely interesting combinations of ideas.

3. STRUCTURING A DISCUSSION

Here's how the process worked during the session.

- **(1) Pass out cards.** With the help of a few volunteers, each person in the audience was given a few random cards. I explained what I had done and what was about to happen.
- **(2) Form groups.** I asked the audience to turn their chairs around and form into groups of about 4-6 people. Smaller groups were combined and I encouraged people to get together with others they didn't know. Throughout the session I encouraged people to leave groups and form new ones, or trade cards between groups. Halfway through the session I gave each group additional cards in case they were getting tired of their original set.
- **(3) Select cards.** I would project the current fill-in-the-blank question. Each group had just a few minutes to share their cards and the best pair to fill in the blank. The discussion in each group was fast and furious.
- **(4) Come up on stage.** Then I asked each group to send a representative to the stage with the cards they had selected. Most sent someone every round, but it was OK if a group sat out. I also asked that each group send a different representative each time to maximize the number of voices that got heard.
- **(5) Discuss.** This was the heart of the session. Sitting onstage, people shared their cards, reading the entire statement and filling in the blanks with their group's selections. Usually they wanted to explain what the group had been thinking. My job was to keep the conversation moving and to bring out any interesting points of agreement or disagreement. When possible, I highlighted differences of opinion and asked people onstage or in the audience to comment on one side or the other.

Rinse and repeat. I had prepared more questions, but we got through 4 of them in about 45 minutes. In my role as circus ringmaster, I had to keep things moving quickly. But it was just as important to be flexible. Some groups sent multiple representatives, merged card phrases together, and even stole cards from others to make on-the-spot modifications. Being fast and loose with the rules let the participants be creative and really make the session their own.

4. SOME CONCLUSIONS

Constraints work.

The process did function well. You can see from the photos that everyone really is engaged and enjoying themselves. The basic mechanism of the cards and blanks gave just enough structure for people to become very creative very quickly. The ideas that came out of the conversation were truly interesting and thought-provoking. And there were more than a few real clashes of genuine disagreement.

They could only blame themselves.

All of the card content was taken from the session descriptions. This meant that the discussions always reflected ideas that were somehow in the air of the event already—even when they were being forcefully refuted! I couldn't be blamed for the discussions and arguments that emerged since they came from the speakers themselves.

Arguing can be fun.

I believe that disagreement is one of the best ways to explore ideas—when there is a productive debate, contrasts become clear and the audience can figure out their own position from the different points of view being presented. But it is hard to stage a real debate in a professional context—few people enjoy arguing and no one likes to make enemies. The abstraction of the cards and blanks and the group decision-making let people take very strong positions and disagree openly with each other. No one felt that their own personal ideas were ever under attack.

Room for many roles.

Some people couldn't be kept offstage. Others ran from group to group trading cards. Still others just preferred to watch. There were enough ways for people to interact so that they could find their own preferred role to play.

Shake up the system.

Perhaps my favorite aspect of the session was that people came up onstage that would never otherwise have had a chance to address the crowd. Students could

lecture their professors; players could tell designers what they thought about design. By allowing anyone to come up on stage, the usual power dynamics of the conference were just a little bit undone.

Figure 5: Audience and speakers discussing the game on stage

Design for reuse.

As a classroom exercise or way to structure a conference session, I highly recommend this method of staging a "clash." It does take a bit of preparation but is well worth the effort. If you do try it out, let me know how it went!

Let go of the rules.

The whole session had a somewhat wild and unpredictable feeling, which was made possible by the fairly simple structure. Once people got comfortable with the system after the first round or two, they started bending and breaking it. As designers, we too often try to get players to follow our rules exactly when what we should be doing are creating situations that result in unpredictable and meaningful play.

Thanks to Gundolf S. Freyermuth, Katherina Klimek, and Judith Ruzicka for helping me to design and implement this very playful clash.

How Close Are We to the Holodeck?

JANET H. MURRAY

In 1997, I used Shakespeare's most revered play and a STAR TREK'S fanciful holographic entertainment environment as cultural reference points for thinking about the convergence of profoundly meaningful storytelling and powerfully immersive computation. *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*[1] asked whether we could expect to see digital storytelling reach the level of human expressivity that we recognize and collectively reverence in Shakespeare's *Hamlet*. The title was meant to challenge the perceived disjunction between high culture and digital media and to provide a conceptual framework for thinking about how new narrative platforms and genres might evolve over a long period of time. I did so in part by examining specific late 20th century artifacts that seemed to show the direction of innovation for the coming medium. Two decades later, the assumptions and predictions of the book have been validated, and a new set of artifacts is available for considering how close we are to the appearance of a cyberbard.

The holodeck has proven to be a useful cultural touchstone. It was conceptualized by Gene Rodenberry as part of his transmedia STAR TREK world, appearing first in a 1974 animated series, and becoming a major part of the 1987 relaunch of the franchise, with the STAR TREK: THE NEXT GENERATION TV series. The idea for a room filled with illusory three dimensional, seemingly material beings and objects was based on the technological speculations of Gene Dolgoff, the inventor of the digital projector. Dolgoff was inspired to work with holography in the 1960s because he saw 3D light projections as "the ultimate way of

1 Murray, Janet H.: *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*, New York: Simon & Schuster/Free Press 1997, 2016.

reproducing reality."[2] In 1973, he spent a day showing Rodenberry holograms and arguing that a vision of the future should include "a room [...] where people could be transported—not really transported—but believe they were in a new place." It was Rodenberry who came up with the name and established the story patterns for how holograms would entertain, serve, and menace the crew of the Enterprise through multiple STAR TREK series. The conceit was so compelling that by the turn of the 21st century the holodeck was routinely referred to as the "holy grail" of artificial intelligence researchers and game designers:

"The ICT is on a quest to envision and prepare for the future', and, says Lindheim, 'Our Holy Grail is the Holodeck'."[3]

"If placing your body in a fully-immersive virtual world is the game developer's ultimate goal, then the holodeck is the holy grail."[4]

And with the arrival of consumer VR devices in 2015, PC Games Magazine announced the sacred quest was at an end: "The holodeck is here."[5]

Such claims overlook the many still magical technologies implicit in Rodenberry's imaginary invention, which assumes spontaneously responding characters in a palpable world of solid objects. The holodeck as metaphorical holy grail is not so much a technical goal, as an aesthetic one: the pursuit of deep immersion combined with powerful interactivity. In fact, the impossibility of actually creating Roddenberry's imaginary environment may be part of its appeal. Just as Dolgoff dreamed of "reproducing reality," the audience for the Star Trek

2 Dolgoff, Gene: "Fireside Chat with Gene Dolgoff," in: J. Warren, *Versions: The Creative Landscape of Virtual Reality*, New Museum, New York: Kill Screen and NewINC 2016.

3 Derian, James Der: "Cyberspace as Battlespace: The New Virtual Alliance of the Military, the Media and the Entertainment Industry," in: J. R. John Armitage, *Living with Cyberspace: Technology and Society in the 21st Century*, New York, London: Bloomsbury, 2002, here p. 71.

4 Graft, Kris: "Chasing the 'Holy Grail' of the Video Game Holodeck," in: *Gamasutra* 2013, http://www.gamasutra.com/view/news/203147

5 Edwards, Tim: "Hands-on with Valve's Amazing VR Demo: The Holodeck is Here," in: *PC Games* 2015, http://www.pcgamesn.com/hands-on-with-valves-amazing-vr-demo-the-holodeck-is-here

holodeck is seduced by the prospect of a fantasy life so detailed and concrete that it substitutes for the real world.

The years since *Hamlet on the Holodeck* was first published have confirmed my predictions of a sustained collective effort of narrative invention, drawing on diverse communities of practice. There is a rich tradition of narrative videogames, both mass market and independent, engaging diverse player communities. At the same time, traditional narrative forms like television and live theater, have embraced game structures, creating worlds that invite multiple forms of interactivity. Computer science explorations of artificial intelligence in storytelling, which formed a key part of the argument of *Hamlet on the Holodeck,* have expanded. And most recently, virtual reality devices have come onto the consumer market, receiving considerable attention and corporate funding, and creating a lively new community of practice. This essay looks at some representative examples from these diverse traditions in the light of the question posed in 1997 and still open to exploration: Are we moving toward an expressive interactive digital form of storytelling that can someday provide the kind of deep vision of what it means to be a human being that we cherish in great art in traditional forms?

This is a different question from the technical issues of whether we yet have holographic characters we can talk to and holographic chairs we can sit on, as portrayed in the STAR TREK episodes. In fact, I would argue that concern with reproducing the real world, Dolgoff's target, is often an obstacle to creating belief in a fictional world that we can interact with. The importance of designing virtual characters with a few exaggerated qualities that create belief (a large duck bill) rather than with the detail of literal reproduction (every feather in a duck's wing) is a well-known insight of AI researcher Joseph Bates, one of the early pioneers of computational narrative[6] who was in turn influenced by the great Hollywood animators,[7] but it is a lesson that has to be learned over and over again.

In fact, the confusion between the real and the imaginary world is one of the recurring themes of holodeck plotlines on STAR TREK: THE NEXT GENERATION

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6 Bates, Joseph: "Virtual reality, Art, and Entertainment," in: *Presence: The Journal of Teleoperators and Virtual Environments* 1/1 (1992), pp. 133-138; Ibid., "The Role of Emotion in Believable Agents," in: *Communications of the Association for Computing Machinery* 37/7 (1994), pp. 122-125.

7 Johnston, Ollie/Thomas, Frank: *The Illusion of Life: Disney Animation,* New York: Hyperion Press 1981, 1995.

and STAR TREK: VOYAGER. In its positive form, it is a wish-fulfillment dream of a world of immediate gratification in which the things that we imagine are effortlessly realized for us to enjoy—we talk with Leonardo da Vinci or get to play Sherlock Holmes in a simulated London. But the other side of the holodeck fantasy is the fear of an inescapable fantasy. STAR TREK plots offer multiple versions of this nightmare. A real person may be trapped in a simulated world and unable to escape back to reality, or fantasy villains may escape and wreak irreversible harm to real flesh and blood. Sometimes, the horror derives from our vulnerability to deception, the ease with which we could mistake a simulated reality for the actual world, or our temptation to preserve the fantasy at the expense of real life.

Commercial claims for Virtual Reality platforms play on both the longing and the fear. They promise to transport us to beautiful alternate worlds where we can soar like an eagle or pilot a spaceship, and they scare us by threatening an invasion of horror movie monsters in our familiar spaces, literally in our faces. And the thrill of the holodeck immersion is also invoked by contemporary analog experimentations such as new forms of theater that obliterate the distance between audience and actors.

Looking at some ambitious projects, virtual and physical, that aim at creating the experience of inhabiting an alternate space and sharing it with fictional characters, we can gauge our distance from the "holy grail" of the holodeck aesthetic experiences and identify the strategies that support or undermine more interactive and immersive storytelling. We can also test the assumption that digital technologies can "reproduce reality" and create an experience that is indistinguishable from being there.

THE GUNSLINGER PROJECT OF USC ICT

As we saw in Lindheim's comment above, the STAR TREK holodeck was identified early on as the "holy grail" for researchers at USC's Institute for Creative Technologies, which works at the intersection of computer science, military simulation, and Hollywood entertainment. The GUNSLINGER project,[8] which I visited in February 2011, involves a physical mock-up of a western-movie-style saloon fitted with large-screen displays of computer-generated characters who

8 GUNSLINGER (2007, ●: Arno Hartholt). https://www.youtube.com/watch?v=●sXyCjKbzu8

respond to gestures and speech. You are given a cowboy hat fitted with electronic tracking equipment, a holster and a six-shooter that functions like the ones in a videogame arcade. Having grown up avidly watching old Hollywood western movies and the many cowboy shows of the 1950s and 1960s, I was as eager to step into the world of my childhood fantasies, as STAR TREK'S Captain Janeway was to enter her Victorian governess holodeck fantasy world. The details of the set, starting with the swinging saloon doors through which you enter the make-believe world, were well chosen to script the interactor with genre-based story expectations.

But as a narratively motivated interactor on the GUNSLINGER set, I could not engage in meaningful interactions to put these story expectations into effect. For example, if I thought of looking for an ace up the sleeve of one the poker players—a common trope of western saloon poker games—there was no way to induce one of the virtual characters to do it, and the characters themselves were out of reach as screen-based characters rather than 3D projections. With less ambitious natural language processing they might have turned to me and asked a simple question that furthered the plot. For example, one character might have asked me if I thought the other was cheating, but the interaction design lagged behind the charm of the set design and the computational virtuosity of the back-end language processing. The lack of cues for meaningful interaction—a reason to say something in particular to the poker players or the barman and to receive a particular, dramatically satisfying response within a clear dramatic scenario—made the life-size, speech-generating characters less present.

I have described the touchstone of design in interactive narrative as "dramatic agency" which I define like this:

> The experience of agency[9] within a procedural and participatory environment that makes use of compelling story elements, such as an adventure game or an interactive narrative. To create dramatic agency the designer must create transparent interaction conventions (like clicking on the image of a garment to put it on the player's avatar) and map them onto actions which suggest rich story possibilities (like donning a magic cloak and suddenly becoming invisible) within clear stories with dramatically focused episodes (such as, an opportunity to spy on enemy conspirators in a fantasy role playing game).[10]

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9 https://inventingthemedium.com/glossary/#agency

10 Murray, Janet H.: *Inventing the Medium: Principles of Interaction Design as a Cultural Practice*, Cambridge, Mass.: MIT Press 2011.

The gunfight portion of the installation produced an appropriately story-motivated action based on the genre: a clearly defined action mapped to a physical object—drawing the six-shooter from the iconic western holster and shooting the bad guy before he could draw and shoot at you—leading to highly readable results in the form of projected blood splatter on the screen that separated me from the virtual character.

In fact, I used a similar arcade experience as a key example in 1997, describing the self-consciousness I felt when my children witnessed me raptly shooting at Mad Dog McCree, despite having banned guns from our own house. I posited a kind of game that has since been realized by members of the mainstream and indie game community, in which you are asked to perform acts that may feel fine at the time but become morally uncomfortable as the consequences are revealed. In the Gunslinger set up I felt self-conscious, but it was from the failure of the fantasy to engage my belief. Like the actors in *Rosencrantz and Guildenstern Are Dead*,[11] who are shamed to find out that their audience has slipped away and they have been acting into the void, I felt exposed in my cowboy hat and holster by my inability to find a place in the desired but incompletely realized make-believe world.

When computer scientists concentrate on backend artificial intelligence to understand natural language, they are on Dolgoff's quest of *Reproducing Reality,* which is different from Joe Bates' and Disney's goal of believability, which we might call *Representing Stories.* Mass-market games like GRAND THEFT AUTO or WORLD OF WARCRAFT provide a palette for representing story elements as simple interactive game mechanics by drawing on formulaic elements of genre fiction like gangster movies and fantasy quests.

The creation of spaces that reflect strong genre storytelling traditions (a western saloon, a haunted house, a tavern in a quest fantasy world) go a long way toward creating immersion by motivating the interactor to take actions to elicit plot events associated with the genre. For VR designers, the ability to create immersive theatrical spaces for an interactor to walk through presents an opportunity to seed the physical space with well-chosen props that invite exploration and whose manipulation will somehow advance the story. A good model for this is the mechanic of items in an adventure game which appear at specific places throughout a game world and which are available for inspection or acquisition, usually with some trade-off in resources like time, cost, capacity for car-

11 Stoppard, Tom: *Rosencrantz and Guildenstern are Dead*, New York: Grove Press 1968.

rying, or risk of physical danger. Interactive objects should invite engagement, suggesting outcomes that leverage the genre expectations of the interactor. A murder scene should be full of clues, a haunted house full of dark places to explore and doors that may lead to spooky encounters. Engagement with these abstract representations of the story elements should be appropriately rewarded—in ways that are dramatically appropriate though not overly predictable, leading to the experience of the "active creation of belief" in which immersion in a detailed, consistent digital environment leads to the desire to interact, which, when it provides the experience of dramatic agency, increases the sense of immersion creating a reinforcing cycle of deepening involvement.[12] But such an experience of enhanced belief does not come automatically from putting on a VR headset, or from the designer's photographing the actual world in 360°-degree fidelity. Like all deep narrative engagement effects, it is the result of deploying carefully crafted medium-specific conventions of representation.

PUNCHDRUNK PROMENADE THEATRE

Sharing space with virtual characters calls for new conventions of story representation, and new ways of sustaining our belief in the imaginary world. When multiple interactors cohabit a virtual space, there is a possibility of creating an experience that I call the "collective creation of belief," in which other people's enacted or expressed belief in a shared fantasy environment reinforces one's own immersion.[13] This is what happens when children play "make believe" together and when fans of LOST speculate on the secrets of that purposely puzzling TV's show's magic island. But the presence of other people can just as easily disrupt the illusion, as when we see people in present-day dress in an historical theme park, making us feel embarrassed for the play-acting informants pretending to inhabit another century.

This is a design problem that has been explored in live performance environments. For example, the Punchdrunk theater[14] has been successfully mounting productions in London and New York with sustained runs that invite theatergoers to wander around multiple stage sets in a multi-floor performance space arranged to represent places within a fictional world. SLEEP NO MORE (2011-16)

12 J. Murray 1997, 2011, 2016.

13 J. Murray 1997, 2016, here Chapter 4.

14 http://punchdrunk.com

turns an abandoned New York hotel into Macbeth's castle,[15] and the London production of *The Drowned Man* (2013)[16] turns a cavernous former postal sorting station into an abandoned movie studio. The plays are called "promenade theater" because the audience members follow actors from one fictional location to another, or sometimes just poke around examining the elaborately dressed actor-less sets. Scenes are performed simultaneously, making for many choice points and for considerable divergence in the experience of individual theatergoers. Comparing experiences after the performance is a particularly pleasurable part of the experience, making theatergoers aware of the depth and variety with which the storyworld has been instantiated. As with the LOST viewers on the internet, the attempt to make sense of disjointed experience can serve as an intensification of the immersion, an after-the-fact exercise in the collective creation of belief.

During the experience, the physical space creates a sense of enclosure in another world, as in a visit to a well-designed theme park that covers a lot of space and obstructs the view outside the boundaries. The Punchdrunk productions include detailed set designs that suggest the interactive spaces of mystery-themed adventure games in which objects are meant to be examined and evaluated as potential solutions to game puzzles, often involving revelations of backstory. These spaces encourage solitary exploration, which sometimes leads to sexually titillating encounters that play with the separation between audience and player.

We can think of the Punchdrunk productions as a kind of holodeck experience, then, in real space, but with limited ability to interact. Audience members can examine documents and props and move around spontaneously according to their own curiosity. This provides a novel sense of being inside the fictional world. At the same time, they are kept behind the fourth wall with a strategy discussed in Chapter 4 of *Hamlet on the Holodeck*—the wearing of a mask. The audience members wear identical, neutral, but highly theatrical looking masks that hide emotional reactions, inhibit action within the fictional world, and direct attention away from fellow viewers and toward the performers. The masks also provide a kind of mythic gravitas to the actions portrayed.

The Punchdrunk plays are related to experiences I instanced in 1997 as harbingers of immersive, interactive genres: dinner and weekend resort experiences in which actors mix with audience members who are cast in the role of vacationers or wedding guests at an event that turns dramatic through a murder or comic

15 http://sleepnomore.com

16 https://www.youtube.com/watch?v=DZKNNMombV8

family quarrels. Usually the audience members are observers, but they can be participants in the ritualized elements of the event such as dancing at the wedding. In some variations, which are closer to live action role-playing, the participants may share a meal, in which each is given a pre-scripted role and scene-by-scene cues for revealing plot points or furthering individual aims. In all of these formats, there is a tension between the role of observer and participant, scripting and improvising.

Professional immersive live theater takes these strategies to the next level, illustrating the power of detailed set design and the efficacy of audience masks to create and reward dramatic expectations and to avoid disruption by establishing a fourth wall within a 3D space. Here, the range of activity is limited to navigating the fictional space and choosing which characters to follow. In more closely scripted interactive stories, the choice of whom to follow could be dramatically significant and provide a strong experience of dramatic agency. In my experience of the *Drowning Man,* the plot was never made clear enough to motivate me to move one way or another. *Sleep No More* is more successful, by all accounts, because it is based on the familiar, highly melodramatic story of *Macbeth,* and produced in a more compressed space leaving less room for the audience to wander in limbo between significant scenes. Both plays rely more on expressive dance vignettes than on spoken dialog, and they succeed as elaborate dramatic spectacles rather than as coherent presentations of character and plot, as in a traditional play or a more story-driven interactive fiction. VR may turn out to foster similar experiences in which the pleasure desires from wandering around a spectacular space, or even sitting in a rich 360-degree soundscape, perhaps seeing oneself and others reflected in costume and maybe a few ritual gestures as in the inventive videogame JOURNEY. The confusion of such an environment may be a feature rather than a bug, creating the experience that play theorist Roger Callois called Ilinx (dizziness as from a whirlpool) by enclosing the interactor within a highly evocative spectacle where disorientation and lack of control is experienced as a pleasurable escape from the mundane world.

HENRY THE HEDGEHOG (OCULUS STORY STUDIO)

When Saschka Unseld became head of Oculus Story Studio, he brought to high production budget VR projects a set of storytelling techniques from traditional filmmaking, but he soon discovered that they did not work. He set out to make a comedy about a hedgehog who could not hug people because he was so prickly, but he was surprised to note that mishaps he expected to work as comedy

seemed oddly sad in VR. Unseld attributes this to the absence of the fourth wall that tells you in a movie that what is happening on the screen is not real. Unseld offers the insight that to have a close-up view of a character who is about to cry feels "uncomfortable" in VR, so pathos has to be staged at a distance to leave the VR viewer free to empathize without being confused by a need to respond.[17] Unseld's observations reflect the wider process by which filmmakers are discovering that storytelling in virtual reality requires more than adding another spatial dimension to the same narrative structures.

In the case of HENRY THE HEDGEHOG, which I viewed at an Oculus lab in San Francisco, the interactor sits on a rug that puts you on the verge of action in the fanciful home of the main character. The space seems continuous with your position and you can turn around and see things behind you. This responsiveness of presentation rewards your head movement, which reinforces the sense of actually being there in a physical sense. The scene in front of you has height and depth and some cartoon characters fly around it, motivating more head movement. There are a few moments in which Henry looks at the interactor to acknowledge their presence. But dramatically we are kept at a distance by the lack of interactivity. You cannot have a piece of the birthday cake that is being eaten so close to you, of course, but neither can you get up and walk around in the richly detailed and therefore enticing space. As Unseld found out, when the jokes fell flat and the pathos became uncomfortable, the situation of ambiguous presence is a poor fit for the dramatic problem of the film, which is Henry's loneliness, increasing our self-consciousness and eroding immersion.

Often we can see the future of a medium by attending to our frustrations with the skillful experiments that lead the way by making the necessary mistakes. The frustration I felt in not being able to further examine the enticing detail of the cartoon set suggests some design possibilities that future projects could exploit, such as rewarding closer inspection of details with revelation of secrets. It would also be wise to actively attract attention to the space to the side or behind the interactor by using spatialized sound or the movement of characters as attractors for visual exploration. As interactors stand rather than sit to participate in these spaces, ducking from approaching objects and tip-toeing to see things just beyond eyeline would provide dramatic satisfactions from natural embodied gestures.

17 Unseld, Sasha: "Sasha Unseld: Uncovering the Grammar of VR," *Future of Storytelling (FOST) Summit 2015*, https://vimeo.com/140076841

Of course, more extensive interactions are possible using the emerging VR platforms that track walking through the space and, most importantly, using one's hands (with controllers or gesture capture) to manipulate objects. A cartoon environment like Henry's with an elaborately detailed, multi-plane, multi-level, and whimsically enticing story world would be an appropriate framework for manipulable objects that would allow a greater degree of interactivity.

SKAMMERKROGEN (THE DOGHOUSE) 2015

Another ambitious approach to scripted events in three dimensions is SKAMMERKROGEN (THE DOGHOUSE) made for the Oculus Rift by Danish artists Johan Knattrup Jensen and Mads Damsbo, and presented as a multi-viewer installation art experience in which five people are seated at a physical dinner table, which is set for a family meal. Each player has their own headset and sees the action from their own point of view with the ability to experience 180° freedom of head movement.

Those seated at the table see the same events through different characters' point of view. But the physical and represented worlds diverge—the character moves independently of the viewer including leaving the table for another room, which can induce dizziness. Looking down, the interactor sees the character's body, with the character's hands in their lap or on the table, with no control by the inhabiting viewer. The desired effect, as one of the creators puts it, is to watch a movie but from inside the head of one of the characters, and to be able to look around the movie while it continues. The experiences of the characters are mostly the same, but they diverge in dramatically significant ways that reinforce the theme that the world is composed of many subjective realities rather than just the individual ones we may take for granted. As with the Punchdrunk Theatre presentations, much of the pleasure of the story is in comparing versions afterwards, which the creators consider an intrinsic part of the dramatic experience.

Jensen and Damsbo want the experience to allow the visitor to "jump easily and blithely" from one "perspective and truth" to another, but they found that hard to achieve. Like Unseld, the Doghouse team discovered that the absence of a fourth wall confused their audience. Watching a film from the head of someone seated at a table while you are physically also seated at a table creates confusions between the actual objects and the virtual representations, so that interactors may try to pick up actual (but empty) wine glasses only to find the headsets in the way. They are cued to act in the virtual space, but the interaction design

does not support it.[18] The dinner party physical set works well as a provocative art piece for gallery visitors who are not taking part in the installation since they see five people at dinner, not eating or talking to one another, with odd VR headsets on, but it is less appropriate for the interaction design. This is another good illustration of the fallacy of literally *Reproducing Reality*, instead of creating a stage set for believable storytelling with representational story objects that afford interaction.

Defining the physical limits of the virtual world is a persistent problem with VR gear, not just for filmmakers who are new to interactivity like the Doghouse team, but even for experienced game designers. For example, there is a bow and arrow in the demo program for the 2016 release of the VIVE headset—one of the first to include hand controllers. Interactors particularly enjoy a satisfying simulation of a bow and arrow in which both hands are needed and the action is well synchronized, especially in the moment when the bowstring is caught by the notch of the arrow. But the very success of the illusion creates confusion (or it did for more than one tester in my lab) by leading players to position the arrow hand next to their cheek as in real world archery, which then breaks the illusion by making them aware of the hand controller and headset. To make this kind of embodied interaction in virtual space successful, designers will have to create a new gestural language and new set of digital signposts to mark the boundary between physical and the virtual objects.

Setting aside the awkwardness in handling physical point of view, the Doghouse's basic structure of five subjective points of view on the same event is dramatically promising for the new medium. A related and equally promising approach is reported as a focus of exploration of BLACKOUT, a forthcoming VR project that takes place on a New York City subway train and allows you to live out the common fantasy of entering the minds of the people around you.[19] The use of VR for exploring multiple points of view, and for "easily and blithely" moving from one perspective to another, as the Doghouse artists wished to achieve, is particularly appealing to me as a path to realizing my most ambitious hopes for the medium—the creation of kaleidoscopic structures.[20]

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18 Jensen, Knattrup/Damsbo, Mads: "Skammerkrogen (The Doghouse): Interview with the Artists," 2014, https://vimeo.com/104512220

19 http://www.fastcodesign.com/3053634/blackout-takes-you-inside-the-minds-of-nyc-subway-commuters

20 J. Murray 1997, 2016.

When a technology of representation is first introduced, novelty creates a feeling of magical transportation. This can lead some to claim that VR is an automatic "empathy machine" and others to look to it as a way of jumping into the frame of a cinematic reality and inhabiting another character. But the deeper experience of empathetically participating in other points of view will depend, as it always has, upon the medium-specific craft of storytelling, and specifically upon the pioneering storytellers who will collectively invent a new set of media conventions to create coherent and expressive new interactive genres.

NONNY DE LA PEÑA'S IMMERSIVE JOURNALISM

One such pioneer is Nonny de la Peña whose goal is "immersive journalism," achieved through the painstaking recreation of scenarios drawn from actual events, presented in real time but with skillful dramatic compression. Using documentary audio and recreated 3D images, de la Peña distills politically charged events into actions that are character-based and compelling.

For example, de la Peña's first VR film, HUNGER IN LA presents us with a 3D graphic recreation of a long line for a food bank. We are there as an embodied observer, a witness who can move around in the scene which is realized with actual recorded audio. Like all of de la Peña's work, it is focused on a particular dramatic incident. We are given just enough time to experience impatience with the slow-moving line, when a man standing near us collapses in a diabetic seizure. We can choose to kneel down next to him as we all wait with him for the ambulance.[21] De la Peña is journalistically meticulous in her reconstructions but she is not trying to reproduce reality, but to document it through selective representation. She has the journalist's commitment to focusing attention on the salient detail, to finding the story. This elevates her work beyond most other examples of documentary journalism which are content to point a 360° camera at something that has gone largely unseen, and that often use techniques from conventional filmmaking like voice overs and jump cuts to capture information. By contrast de la Peña abstracts reality into a compressed experience that puts the viewer in control of the camera, creating greater verisimilitude with strong dramatic focus.

21 De la Peña, Nonny.: "Hunger in Los Angeles," in: *Immersive Journalism*, August 15, 2013, http://www.immersivejournalism.com/hunger-in-los-angeles-machinima-video/

These representative examples from diverse media traditions reflect a collective effort to invent more immersive and interactive formats for storytelling, to take us closer to something like the active engagement in a responsive story-world like the fictional STAR TREK Holodeck. They are all struggling with the boundary between the real and the virtual and with establishing immersion in a medium that lacks clear conventions for a fourth wall. They each offer lessons in what does and does not work in creating satisfying interactivity in virtual environments, lessons that will continue to be built on by a diverse community of storytellers. It is always easier identify the direction of change than to predict the pace of change. Taking the short view, it is hard to predict when we will see VR interactive stories that are likely to outlast the fragile platforms currently on the market. Taking the long view, it seems likely that the promising strategies being explored today will be elaborated on in the coming decades, inventing the conventions of powerfully interactive and immersive virtual worlds, moving us in a dispersed yet collective craft practice step by step closer toward the moment of unmistakable bardic achievement.

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The Potential of Procedurally-Generated Narrative in Video Games

MARK J. P. WOLF

Since their early use in the 1980s, procedural generation techniques have provided games with greater replayability through the development of combinatorial content that allows larger game worlds than what hand-crafted locations and experiences could provide. More recent examples, like Shamus Young's PROJECT FRONTIER, Miguel Cepero's PROCEDURAL WORLD, and Josh Parnell's LIMIT THEORY, and of course, Hello Games's NO MAN'S SKY (2016), have demonstrated some of the possibilities for the procedural generation of game spaces, creatures, and environments. The area of procedurally-generated narrative, however, is much less developed.

While procedurally-generated narratives may have many uses in various media and a variety of contexts, commercial and otherwise, they are most needed in the area of video games, where the participation of the player making choices directs the course of the game's events. The game's algorithm must respond to what the player does, and at the same time usually represents the side opposing the player and creates the conflict which underlies the game's narrative. Although most games have preprogrammed narratives that allow relatively little variation from one playing to the next, which also limit the player's options to a considerable degree, one could try to create a game which improvises a narrative structure based on the player's actions, and continually rewrites the direction of the narrative as play progresses. Such an automated form of storytelling would not only make the game replayable, but would have many uses outside of games, and perhaps would reveal some basic aspects of storytelling itself.

DEFINING NARRATIVE REQUIREMENTS

So can narratives be procedurally generated? This, of course, depends largely on one's definition of narrative. If we loosely define a narrative as a causally-connected sequence of events that plays out to some kind of a conclusion with closure, then, yes. For example, we can consider a chess game to be an abstracted narrative about two warring kingdoms and their strategic conflict which ends in the defeat of one of the kingdoms; such a narrative is easily generated, since we have long had computer programs capable of playing a decent game of chess.

But we usually mean a more elaborate narrative than that of a chess game. Some projects, like INFINITALE, consist of creating a series of narrative units and then assembling them in random orders to produce narratives. While similar methods of randomization and theme and variation may work for the creation of things such as procedurally-generated landscapes, they do not work well with the linear nature of narrative. Randoms combinations do not always produce plausible sequences of cause-and-effect, nor do they consistently produce character growth and development, or character arcs.

Other approaches rely on the audience's ability to make connections between story elements. Inspired by Russian folktales, the game FOREST OF SLEEP, a work-in-progress by Ed Key and Nicolai Troshinsky, has the player guide three children through a forest, while meeting and interacting with characters on the way there. According to Phill Cameron, writing for *Gamasutra*,

> "The plan with the story system is to use a lot of visual language in the sense of framing and cutting between images and the position of characters [...] Like a cinematic language, but one that's characteristic of Eastern European animation. We want to delegate a lot of the process of telling the story to the player's imagination, while creating something that is a well-structured story in a formulaic, screenwriting way."[1]

If too much is left to the audience's imagination, however, the story may fail to cohere and fail to hold their attention. Such a method is also similar to the random combinations of narrative units in the hope of generating a story. While most narratologists like Propp, Genette, and others have examined the structural

1 Cameron, Phill: "Procedurally Generating a Narrative in Forest of Sleep," Gamasutra, November 24, 2015; http://www.gamasutra.com/view/news/259455/Procedurally_generating_a_narrative_in_Forest_of_Sleep.php; https://killscreen.com/articles/forest-sleep-looks-beautiful-eastern-european-folktales

aspects of stories, a few theorists, like Barthes, have tried to define indivisible narrative units or building blocks, and usually have had to admit to the arbitrary nature of their divisions, or at the very least settle for a character-based approach. Setting up characters as agents with their own goals and means is another approach to generating an emergent narrative. As Tom Cross writes for *Gamasutra*:

"A game could present multiple actors, and in-game entities that had their own goals, made decisions based on their own desires (as created by the designer), and thus affected their surroundings, and possibly the player. If the unit of simulation isn't resources, vehicles, day-night cycles, but characters, agents with a scripted set of goals and behaviors relative to the gameworld and the other characters in the system, then it is possible to run a system whose compositional elements are narrative.
The possibility of creating such a system clarifies how much the vagueness of the idea of "story space" and "emergent narrative" depends on uncertainty about what narrative is. Saying that if we give users a good enough toolset, they'll make their own stories, is as much to say, "We don't know what story is, but we know that it's out there."[2]

Characters, and the events they are involved in, seem to make up the basic elements of stories. In the case of our chess game example, we could say there are sixteen characters on each side, operating through four possible events; moves, captures, checkmates, and stalemates. In more complicated stories, characters are developed to a greater degree, and become more than a cluster of traits and tendencies, and they change over time in a character arc, due to external and internal influences. But to what degree can characters, character arcs, and the events that cause them, be reliably generated?

Before we go further, we could stop here to ask, can *human beings* procedurally generate narratives? How well can human authors, with their knowledge of human experience that machines can never hope to have, generate stories by algorithmic means? Dame Barbara Cartland, for example, worked 80 years as a novelist during which time she wrote 723 novels, which means that she averaged one published novel every 40 days or so for eight decades, and she still left behind 160 unpublished manuscripts at her death. Clearly, her formulaic works must have used procedural methods, reusing plots, narrative structures, and so

2 Cross, Tom: "Analysis: Story And The Trouble With 'Emergent' Narratives Exclusive," *Gamasutra*, July 10, 2009; http://www.gamasutra.com/view/news/24311/Analysis_Story_And_The_Trouble_With_Emergent_Narratives.php

forth. Philip M. Parker, who has used computer algorithms to compile over 200,000 books (which can be found on Amazon.com) is said to be planning to use algorithms to try to generate romance novels.[3]

A fairly large audience, however, is not content with highly-formulaic stories, whether they are written by algorithms or by human authors. Such works are dismissed by them not only for being formulaic and predictable, but also because they lack anything meaningful to the audience. Thus, we must ask if meaningful narratives are beyond what can be algorithmically generated.

CAN PROCEDURALLY-GENERATED NARRATIVES BE MEANINGFUL?

What is required for a narrative to be considered meaningful? While the uses of the term "meaningful" are varied and also difficult to define, we could suggest that at the very least it means that we expect something from the narrative to apply to real life, and perhaps our own life in particular. We expect a kind of vicarious experience, perhaps learning something along with story's characters; thus, we expect characters to change, to grow, and develop over time. This is one way to go beyond our example of the chess game narrative, where the characters do not change; the queen could fail to protect the knight ten turns in a row yet the knight would still not come to distrust the queen. And pieces never contemplate defecting to the other side.

The ways that characters change is usually expressed in the form of character arcs, in which a character undergoes a series of experiences which result in a permanent change by the end of the story. For example, a character begins by being naïve, idealistic, and inexperienced; he chases his dreams; he falls in love; his dreams are dashed; his heart is broken; he re-examines himself; he finds new strength; and ends wiser, understanding, and more sympathetic toward others.

When character arcs are combined with proven formulas, like that of the Hero's Journey, the narrative template identified by Joseph Campbell, stories that include character arcs can be generated. The results may be somewhat predictable, but at least they will remain coherent and familiar. While such plans have worked time and again for authors working in more traditional media, those

3 Cohen, Noam: "He Wrote 200,000 Books (but Computers Did Some of the Work)," in: *The New York Times*, April 14, 2008; http://www.nytimes.com/2008/04/14/business/media/14link.html?_r=0

working in video games and elsewhere must face the problem of audience interactivity. In video games, the main character is usually the player-character as well, under the control of the player. Thus the game's author can lay out the events of main character's character arc and force the player to move along them, halting or ending the game when the player does not, or the game's author must constantly readjust the narrative for contingencies encountered wherever the player can make decisions and accept or reject the offered storyline. For example, while playing GRAND THEFT AUTO V (2013), a player can decide to refuse criminal missions and instead simply roam about the city; but there will be little or no interesting narrative action after such a decision. In games in general, there may be several pre-planned narrative endings depending on the player's decisions, but such a branching narrative structure is also relatively limited and does not vary with gameplay. Of course, these kinds of limitations are well-known enough among players so that in general, narrative expectations are certainly lower than they are for non-interactive media; but need they always be so?

So what aspects of narrative are important to the gaming experience? What is the relative importance of such things as meaningfulness, the moral to the story, plausible character arcs, unpredictability, a surprising but not un-foreshadowed narrative twist at the end, and closure? If the player-character is given too many choices or too many options per choice, what guarantee can be given that any of these things will still be possible to a significant degree? Many of these things depend on the main character, but a purely character-centered approach, in which a character arc is determined ahead of time, may not work when the player is left to make too many free choices. We could, instead, build a narrative structure that allows for contingencies around the main character itself, and is presented from that character's point of view, one that focuses on *relationships* and *decisions*.

RELATIONSHIPS AND DECISIONS

Instead of focusing on characters who are the points or nodes in a web of character relationships, we could reverse the figure and ground and consider the relationships themselves that make up the web, which share the same set of characters at their endpoints. In this sense, just as characters traverse character arcs during the course of a story, relationships can be seen as traversing dynamic relationship arcs during the course of a story. For example, one could chart a possible relationship between characters A and B: A and B meet as strangers, A and B find they have a shared goal, A and B learn to work together toward their

goal, A and B establish trust, A betrays B, B takes revenge on A, A and B become enemies, A and B have regrets, A apologizes to B, B apologizes to A, and A and B reconcile.

One advantage of a relationship-centered approach over a character-centered approach is that characters become more than just a set of traits and tendencies. Characters that are defined by a bundle of traits, which they follow consistently, tend to be less dimensional, because they respond to all the other characters who interact with them in much the same way; for example, the kind innkeeper who is generous to everyone, or the miserly villain who is mean to everyone. This does not take context into account, considering that people act differently when interacting with people they know than when they interact with people they do not, and how people respond to each other also depends on the state of their mutual relationship. With a relationship-centered approach, a character can be made to respond according the relationship existing between itself and the character with whom it is interacting, something which may change over time.

This is not to say that characters cannot be defined or given traits and tendencies that guide their behaviors and make them unique and consistent in certain ways. To generate a detailed and engaging story, you have to build a world, and certainly well-defined characters are a part that world. But the relationship-centered approach also means generating relationships between all non-player-characters who encounter each other, some of whose relationships may become known to the player-character, which will then allow the player to learn something about the other characters which will be useful when the player interacts with them later on in the game.

At Trinity College Dublin, The TCD Game AI Project have applied machine learning to the A.I. used by non-player-characters in games. As MacNamee and Cunningham explain,

"*Relationship Model:* [...] Typically this model plots the relationship between two characters across four axes: the amount that a particular character likes another character, physical attraction, dominance or submissiveness and intimacy. To facilitate conversation, this model has been augmented with a value indicating how interested one character is in another. A high interest rating indicates that characters share a number of common subjects of interest, and are thus more likely to converse."[4]

4 Mac Namee, Brian/Cunningham, Pádraig: "Enhancing Non Player Characters in Computer Games using Psychological Models," *ERCIM News* 53, April 2003; http://www.ercim.eu/publication/Ercim_News/enw53/cunningham.html

Information regarding the relationships between non-player-characters can also appear in other areas of the game, such as newspaper articles or character interactions seen at a distance, or they can even be used to generate incidental events like a torn photograph, a flower delivery with a note, or articles strewn across a desk which can indicate the status of a relationship without either character involved being present. Such details could be procedurally generated and then worked into the background of the game's world, where players are able to notice them and realize their meaning regarding changing relationships among other characters; this information may even be crucial to gameplay decisions made later.

As relationships change, they can also be made to change some of the basic aspects of the characters experiencing them as well; for example, a character who is betrayed too often by others could become less trusting and more cynical, while a character experiencing too much success could become brash and overconfident. Characters could each have a list of prioritized values which changes as the majority of their relationships change, at least to varying degrees.

The kinds of relationships that the player-character establishes with non-player-characters becomes a large part of what drives the story and directs its course. A game that procedurally generates a different story every time could actually make the player take these relationships more seriously than he or she would in a game in which the story is already laid out by an author and decision-making merely allows the player to experience the small number of different endings available. By contrast, a procedurally-generated story is unlikely to offer the same characters and relationships a second time, so outcomes that are not chosen will remain unknown to the player, who cannot merely replay the same storyline and choose different options to see what the alternative outcomes would have been. The player's decisions, then, take on a greater significance when the consequences resulting from them are to some degree irreversible and unreplayable. These decisions will cause even greater player engagement if they are difficult to make.

MAKING DECISIONS DIFFICULT (AND MEANINGFUL)

Decisions made by a story's main character are at the heart of every story, and are what shape the relationships that the player-character experiences. The more difficult these decisions are, the more dramatic the story will be for the player experiencing it. Procedurally-generated narratives can produce difficult moments of decision-making by constructing dilemmas in which both available options

result in a loss of established character relationships, or player goals that become unreachable, or setbacks which the player tries to avoid. A decision could even involve sacrificing the player-character's own life; self-sacrifice can be positioned as a desirable game ending, whereas self-preservation, under certain circumstances, can be seen as selfish and cowardly and therefore an undesirable game ending.

Thus, a sense of what consequences will follow which actions is necessary both for the programming of the procedures determining events as well as for the game player, who will need to have a good idea what will happen when decisions are made in order to contemplate which course of action to choose. In a traditional narrative structure, the main character usually faces their most difficult decision near the story's climax; according to the Dramatica Theory of Story, this happens when the main character either runs out of time or runs out of options.[5] Thus, the game's algorithms will need to identify when such a point arrives in a story, or cause it to arrive after a set amount of time, forcing the player to make the big decision that will, for the most part, determine the game's ending.

Decisions can be between courses of action to take, or between characters and their alliances, or between the right thing to do and the easy thing to do. Difficult dilemmas are what make a story compelling, whether we are watching a character make a choice or are making the choice ourselves. The more firmly the player-character's main goal can be established, the more a difficult final decision can be generated, since it will involve whether or not that goal can be completed as planned. By forcing the player to decide what is most important, with important and valuable things at stake in both prongs of a dilemma, meaningfulness can arise, since such a situation is often encountered in real life and is the way that priorities are assessed and become a conscious decision.

The kind of arrangement just described does require some preplanning on the part of the game's author, and whatever algorithms are used, and thus cannot be achieved through randomness alone; so we must examine how and where randomness could be used in the generation of such narratives.

5 "Timelock versus Optionlock," *Dramatica*, 2010, http://dramatica.com/dictionary/timelock-versus-optionlock

THE PLACE OF RANDOMNESS IN PROCEDURAL GENERATION

While procedural generation is known for using randomness applied to templates to achieve variations on a theme, this does not mean that everything is random. For example, in many games, like NO MAN'S SKY (2016), where randomness is used to generate planets, landscapes, plants, and animals, the procedures start with numerical seeds from which everything is generated, and these seeds are the same ones used every time a particular planet is generated, otherwise the planet would be different each time one returned to it. Likewise, narrative situations and their possibilities could begin as seeds which generate narratives. These would include characters and sets of pre-existing relationships that set up the game's initial situation. The characters and their relationships would be regulated within certain boundaries, so as to insure enough diversity, while at the same time establishing at least some basic generic structures grouping characters together, such as police departments or criminal gangs, depending on the genre of the game itself.

The board game CLUE (1949) provides a simple example of the use of randomness amidst procedures; a bit of randomness, the shuffling of the cards, sets up the initial conditions, and afterward the players' suggestions and accusations gradually provide the information needed to correctly identify the killer, weapon, and location. In the case of a single-player video game, the computer would control all the characters surrounding the player-character, generating dynamic relationships between them, which could generate events even if the player does nothing. For example, there could be a police officer character who has established relationships with his co-workers. If too many of these relationships go bad, and if he manages to establish a good relationship with a charismatic criminal, perhaps this increases the chance that he will become a mole and start working for the other side. This is why generating relationship arcs, and not just character arcs, is useful, since the two are so interdependent and constantly influence each other. Part of the challenge for the player is noticing and keeping track of all these relationships, and even guessing at those which may be hidden from the player, much like a detective unravels a case by discovering what relationships exist between people and why.

Just as there are character archetypes that can be used as the basis of the formation of characters before their particular roles in relationships become more specific and unique, so, too, one can find archetypes of relationship arcs between characters, which one can begin with and then alter as needed. Doomed romances, forbidden loves, opposites slowing learning to appreciate each other, nega-

tively-spiraling co-dependencies, and con men working the long con or later getting conned themselves, are all examples of the dozens of relationships arcs which could be used. How might non-player-characters make decisions realistically, but without being entirely predictable? While circumstances, past experiences, and character tendencies would determine the likelihood of certain options being chosen over others, a small margin of randomness within these parameters could keep things from becoming too deterministic.

These are but a few examples and reflections pertaining to procedurally-generated narrative and its apparent potential. I am in no way suggesting that any of the many problems involved have been solved entirely. Attempts at procedurally-generated storytelling have a long history; Chris Crawford, for example, has been working on the problem since 1992, with his Erasmatron and Storytron systems. Designers of sandbox-style games have tried to improve the depth of the emergent narratives that arise from their games, and even card game and board game designers have tried to strike a balance between the rules and structures that stay consistent from game to game and the ability for games to be different every time they are played.

Clearly, rule-regulated and context-driven artificially-intelligent agents, and the dynamic relationships that can be simulated between them, seem to be the best way of developing dramatic situations that can evolve into full-fledged stories. Another advantage to the relationship-centered approach is that the world continues to change even if the player-character does nothing. If the player-character does nothing, this, too, is a choice that ought to have consequences within the game world. The irreversible and unstoppable passing of time, whether we use that time wisely or not, is what makes that time more valuable and meaningful, and narratives that do not wait for the player's response but rather incorporate the player's actions, or inaction, as the game continues, may be a way of simulating lived experience a little more closely.

Considering the difficulties that even human authors have in the creation of well-written, well-structured, meaningful stories with engaging characters, it is probably the case that we will never be able to procedurally generate the kinds of stories that we like best; yet the interactivity and vicarious experiences and exotic worlds that video games can provide may make up for their narrative deficiencies, and as these continue to improve, games will likely grow even more engaging and immersive than they already are, and perhaps the game worlds themselves and their design will generate other kinds of meaning and meaningfulness that will compensate for the narratives taking place within them.

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Cinema and Game Spaces

Contingency as Our New Causality

THOMAS ELSAESSER

There are three challenges that the ascendancy of games as the new default value of what we understand by a popular mass medium pose for those of us who have grown up on the movies and have made the cinema our professional preoccupation.

First, the rise of games gives us a new perspective on the so-called *death of cinema* that is usually deemed to have occurred around 1995, and thus, as it happens, coincided with the same year as the cinema's centenary. Does this particular *death of the cinema*—there have been quite a few previously—indicate the profound paradigm change some people claim, or can and should the two media, the two modes, the two ways of letting us "enter" imaginatively into recognizable but fictional worlds exist side by side?

Second, if we define computer games as "human interaction with a user interface to generate visual feedback,"[1] then this raises the question of *agency, authorship, and authority*, and by extension, it challenges us to redefine authorship in the cinema, given that films today are much more mediated and transmitted via various interfaces (if we treat the different platforms—movie theatres, laptops, smartphones, etc. as interfaces, but also if we treat the make-or-break opening weekend of a Hollywood blockbuster, the international film festival network, or iTunes and Netflix as interfaces).

1 https://en.wikipedia.org/wiki/Video_game, accessed January 2017.

Cinema is also tied into many more feedback loops than it was in its classical period, if we consider the intense marketing efforts of Hollywood, the franchising, the spin-offs into music and merchandizing, but also the blogs and fan sites, the individual film's websites and Facebook pages as so many feedback loops that not only determine the economic fate of a film, but also the way it is read, interpreted, and consumed. To give a brief quote:

"To help studio marketers get ahead of their customers, United Talent Agency and Rentrak, an entertainment data company, are introducing a service called PreAct. It joins an array of Hollywood upstarts offering 'social listening,' a growing field that uses algorithms to slice and dice chatter on social media. PreAct begins unusually early. It closely monitors marketing efforts at least a year before opening weekend. At any moment, studios using the service can log in to a portal and receive various charts that detail how consumers are responding to promotional efforts. PreAct essentially takes information that is culled continuously from Twitter, YouTube, Tumblr, Facebook, Instagram, movie blogs and other sites and provides coming movies with scores in various categories. The system, for instance, looks at the size of the online conversation and how much of it is positive or negative. It also tracks how much activity is organic and how much is the result of specific studio efforts."[2]

The third area where the increasing proximity of cinema and games poses a challenge is in the competing but hopefully also complementary understanding of what is narrative and storytelling in the interactive environment and in the linear environment. But by extension, it also raises the issue of how these two types of storytelling affect or impact more general issues of causality, of chance and contingency.

So, to start with the *death of cinema*: Without going into detail, on the one hand, this is a non-issue (the cinema's death has been proclaimed too many times—arrival of sound in the 1930s, arrival of television in the 1950s, introduction of the video recorder in the 1970s, and the switch to digital in the 1990s). Instead of death, each change of technology has been accompanied by a short hiccup, followed by a mutation and transformation of the cinema that made it seem healthier than before. But on the other hand, this time it's for real, but not in the literal sense, i.e. that we soon won't have any films being made, or even that all the film theatres will close. Rather, because this time the death—or as I

2 Barnes, Brooks: "Hollywood Tracks Social Media Chatter to Target Hit," in: *The New York Times*, December 7, 2014, https://www.nytimes.com/2014/12/08/business/media/hollywood-tracks-social-media-chatter-to-target-hit-films.html?_r=0

would phrase it, the cultural demotion and ideological irrelevance of cinema—gives us an occasion and opportunity for a set of new questions. No longer the old question: "what is cinema?" but different ones. People have come up with asking "when is cinema?," others want to define it by asking "where is cinema?," but the question that interests me is "what is or was cinema good for?"[3]

THE DEATH OF CINEMA—AN OPPORTUNITY TO ASK: WHAT IS/WAS THE CINEMA GOOD FOR?

There are various ways one might specify the question "what is cinema good for?" in the sense of what it has contributed to culture and human civilization. Phrased even more anthropologically: how does cinema figure in humanity's adaptation to their environment, what is cinema's own ecology, so to speak? Several *answers* have emerged, either implicitly or explicitly:

- (1) The famous French critic André Bazin proposed the notion that cinema is a way to defeat death, by preserving an imprint of life,[4] like a cast or a mould, or like the envelope of a mummy;
- (2) The sociologist Edgar Morin made the claim that the moving image answers to "man's age old desire for a double, a likeness,"[5] a mirror in which mankind can reflect its deeds and vanities;
- (3) An assumption implicit in theories of realism is that the cinema is a window to the world, and that the cinema has given us a disembodied eye, one that can go everywhere, knows no shame and no taboo, but also does not have to respect social barriers or physical obstacles;
- (4) Moving images also have their share in making possible "acting at a distance"[6] (Manovich). Images (including maps, diagrams, and CGI) help to

3 For a more detailed discussion of these new questions, see Elsaesser, Thomas: *Film History as Media Archaeology*, Amsterdam: Amsterdam University Press 2016, pp. 21-26.

4 Bazin, André: *What Is Cinema? Vol. 1*, Berkeley: University of California Press 2005, p. 9.

5 Morin, Edgar: *The Cinema, or The Imaginary Man*, Minneapolis: University of Minnesota Press 2015, pp. 30-31.

6 Manovich, Lev: *The Language of New Media*, Cambridge, Mass.: MIT Press 2002, pp. 170-175.

calculate and control the environment, to measure and to modify: this would embrace all the non-entertainment uses of the cinematic apparatus, for instance, in medicine, the sciences, in monitoring and surveillance, for the military and in space exploration, for weather reports and news-coverage on television.

- (5) Along the same lines, but now once more including fiction film, and extending its application to include computer games, one could trace the cinema's role in 'mastering' life through simulation and play, which also has a scientific variant (almost all scientific experiments now require computer simulation, and films might come to be understood as thought experiments, and not as representations, i.e. they are simulationss of test situations).

In this way the cinema can be inscribed in the evolutionary arc of *homo ludens*: man at play, considered as both an ontogenetic (individual) and a phylogenetic (species-related) necessity: play is essential for the formation of a self, and organized play leads not only to sociability but also to adventure and experimentation, as well as contest and competition. After all, the modality of *what if* or *make-believe* is obviously a cardinal property of the cinema, even as—and perhaps because—the moving image also constitutes a particularly rich type of document and testimony of evidence.

FILM AS THOUGHT EXPERIMENT

The consequences that I draw from especially these last possibilities are that digital media and interactive video games give us a unique opportunity to redefine "what cinema is good for," both from an anthropological *longue durée* perspective, and from a more contemporary media-philosophical comparative perspective. For instance, even before we get to the digital era or start comparing the cinema with games, and before we decide whether computer games have made the cinema obsolete, there are two other arguments that put the cinema in a precarious position vis-à-vis other media.

Siegfried Zielinski, in his book from the late 1980s, *Audiovisionen* came to the conclusion that the cinema amounted to an aberration in the long history of technical media, and that it was at best an "intermezzo" or an "entr'acte".[7] Wil-

7 Zielinski, Siegfried: *Audiovisionen. Kino und Fernsehen als Zwischenspiele in der Geschichte,* Hamburg: Rowohlt 1989.

liam Uricchio has been equally radical and has called the cinema a "detour"[8] which significantly delayed the development of what should have been the medium of modernity already in the 1920s, namely television. For Zielinski, the considerations that assign such a minor role to cinema are determined by all those media that over millennia have tried to bridge distances, to connect what is separate, and to capture and preserve on a suitable material support what the human eye sees and the human ear hears—priorities more germane to television and the video recorder than to the cinema. Uricchio similarly considers bridging distance and connecting people as one of the key motors of modem media developments, but he regards "simultaneity" and "interactivity" as the ultimate driving forces behind many of the trends that have helped digital media achieve their dominance. For him, too, television is therefore the more foundational media machine than cinema, followed by games.

Should we therefore start considering the cinema a sub-category of games, and make real time, interactivity and feedback the overarching concept for what Henry Jenkins has called "convergence culture,"[9] into which the cinema will have to fit itself after yet another period of mutation and transformation?

In an essay published in 2009, I offered what I consider to be one part of the answer, namely the rise of the so-called mind-game films or puzzle films.[10] An indie-film genre, but also coming from the heart of Hollywood, if we think of Christopher Nolan's films from MEMENTO[11] to INCEPTION,[12] the mind-game film constitutes precisely such an adaptive mutation to the new conditions of cinema having to survive within an ecology that it shares with several other forms of digital media, including games. I also argue that Hollywood has had to develop strategies of storytelling that not only play on different platforms, but also repay several viewings and/or have the potential of being transformed and repurposed into video games.

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8 Uricchio, William: "Cinema as Detour? Towards a reconsideration of moving image technology in the late 19th century," in: Knut Hickethier/Eggo Müller/Rainer Rother (eds.), *Der Film in der Geschichte*, Berlin: Edition Sigma 1997, pp. 19-25.

9 Jenkins, Henry: *Convergence Culture Where Old and New Media Collide,* New York: New York University Press 2006.

10 Elsaesser, Thomas: "The Mind game film," in Warren Buckland (ed.), *Puzzle Films: Complex Storytelling in Contemporary Cinema*, Oxford: Wiley-Blackwell 2009, pp. 13-41.

11 MEMENTO (USA 2001, D: Christopher Nolan)

12 INCEPTION (USA 2010, D: Christopher Nolan)

But there is another way that I think the cinema is adapting to the contemporary environment, and there I would consider the films under this heading to be the very antithesis of games and instead practice the cinema as a philosophically informed response to games. This is what I have just called "film as thought experiment."

Film as thought-experiment strictly speaking, is neither a descriptive label nor does it have a prescriptive agenda. On the other hand, key to the thought experiment is the hypothetical tense and the gesture of *what if*—both stances that apply to many of the ways we now approach reality itself. 'Let's assume that...' has become almost a default modus operandi, thanks to the technologies of probability, statistics, and the extraordinary advances made in mathematically modeling the physical world in real time. They allow for data-mining, pattern-recognition, and risk-assessment—practices that have turned out to be not only enormously profitable to companies owning these technologies (like Google) or that have access to big data to be mined (Facebook, Amazon, Netflix), but also form habits of mind and foster tacit assumptions that are transforming our notions of what is *history*: history is increasingly understood as data to be extracted or extrapolated from the past and projected along a linear trajectory into a future we thereby hope to predict, provide for and prepare for, but which is also a future we inadvertently empty of possibility, of contingency, and radical change (and therefore preempt and prevent).

Film as thought experiment in this sense situates itself between (but also engages with) digital humanities at one end of the spectrum, while at the other end it reflects (and reacts to) the increasing use of imaging techniques and data-visualization as deployed in the areas of science, medicine, the military, security, and surveillance, not to mention data mining for tracking stock market fluctuations, weather predictions, or making purchase recommendations. Film as thought experiment could even provoke the historical question whether the cinema has helped or hindered such developments, whether it is (from the perspective of interactivity, instantaneity, and ubiquity) an evolutionary dead end, which survives as an emergency break (standing for identification and empathy rather than interaction; turning absence into a form of presence rather than producing instantaneity, and insisting on the irreversibility of time's arrow in the film experience, rather than giving us the possibly illusory power to rewind and replay—including the makeover—rewind and replay by another name—of our lives).

Or on the contrary, has the cinema acted as the accelerator in all this, having been an agent of modeling the world in its own image. For the reverse side of the cinema's function as leveler and equalizer has been its role of relentless idealization and aestheticizing of the world. As Harun Farocki—to whose films and vid-

eo installations I would readily apply the term *thought experiment*—once put it: "Reality is no longer the measure of the always imperfect image; instead, the virtual image increasingly becomes the measure of an always-imperfect actuality."[13]

Games share one important trait with real world risk calculations and predictions in the field of politics, insurance, security services, which I just mentioned. They, too, have a tendency to predetermine or pre-mediate or foreclose the future and therefore they are caught in "loops of belatedness" and in self-referential bubbles. It replays at a larger scale what critics have said about social media, namely that because of the power-structures that underpin them, and the economic priorities that drive them, social media have become echo chambers, where who or what reigns supreme is not the 'sovereign self' of the enlightenment, but the 'sovereign selfie' of Facebook.

The *death of cinema*, in other words, if we translate it into the terms of a loss of cultural prestige and political relevance, could also be seen as the consequence of Hollywood now having and wanting to cater for global audiences—many of whom have very complicated and conflicted views about America's political power in the world, but on the whole are still fervently in favor of American soft power, as projected by the movies.

QUESTIONS OF ACCESS AND CONTROL

What does this imply for authority and authorship and how does one start with redefining authorship within a globalized media environment? An environment where a blockbuster or franchise film is designed for audiences with different cultural backgrounds and political systems, but also for audiences who access films on several different platforms? I follow the lead of those writers who have narrowed the question of authorship and authority in the cinema down to the issue of control.

Control, of course, can be exercised in many different ways: organizational, financial, political, artistic, and intellectual, and many of these types of control are indeed involved in the making, marketing, distributing, and *owning* of a film. Not all of these forms of control need to fall to the same physical individual, or indeed any individual, given the abstract nature of some of the controlling forces

13 As cited by Franke, Anselm: "A Critique of Animation," in: *e-flux Journal* 59 (2014), http://www.e-flux.com/journal/59/61098/a--of-animation/

and functions at work. But I don't think *control* is enough which is why I have added another dimension, which I call *access for all*, inspired by a popular Dutch internet provider.

In a book on *Contemporary Hollywood,* I have argued that contemporary Hollywood should be understood within such an extended, dual strategy authorial dynamic of providing *access for all* at the same time as *keeping control.* Which is to say, Hollywood sets out to make films that are formally and intellectually accessible to as wide as possible a range of audiences, diverse in language, race, religion, region, and nationality, all the while trying to control not only legal ownership and property rights and all the possible platforms of distribution and exhibition, but also steering the scope of interpretations and forms of (fan-) appropriation thanks to a combination of (textual) structured ambiguity and (paratextual) feedback loops.[14]

By way of example, I examined the authorial persona of the director James Cameron and the narrative structure of his most successful film, AVATAR,[15] arguing that both instantiate a convergence of these basically antagonistic forces of *access* and *control*, under the intensified conditions of a global market and an increasingly polarized political world-(dis)order.[16] For instance, by pointing out that it very carefully calibrated the anti-American, anti-imperialist sentiment, leading to people all over the world recognizing themselves as Na'vis—Indian miners, Palestinians on the West Bank, and Chinese villagers—but the film also left intact one of the most racist stereotypes, namely the figure of the White Messiah.

One consequence to draw from this situation is that the author in the global context is both an artificial *construct* and a biographical *person*. Being a locus of agency (control) as well as a focal point of projection (access), s/he is positioned at the intersection of a theoretical impossibility and a practical indispensability. A figure of contradiction as well as of construction, the global author exists within antagonistic forces, whose effects need not work against each other, but can be harnessed so as to re-energize rather than block the different levels of circulation in play. It aligns authorship with other aspects of globalization, where multiple variables are simultaneously interacting with each other, where tradi-

14 Cf. Elsaesser, Thomas: *The Persistence of Hollywood*, New York: Routledge 2013, pp. 319-340.

15 AVATAR (USA 2009, D: James Cameron)

16 Elsaesser, Thomas: "James Cameron's Avatar: access for all," in: *New Review of Film and Television Studies* 9/3 (2011), pp. 247-264.

tional categories of linear cause-and-effect chains have opened up to recursive network effects and where our idea of autonomy, i.e. single source, rational agency, is complicated by models of distributed agency, contingency, and mutual interdependence. These *rhizomatic* tendencies are reinforced by electronic communication and the Internet, whose architecture is the very site of simultaneous, multi-directional, reciprocal, recursive, and looped interactions.

Similarly *distributed*, antagonistic and yet interdependent forces are typical of today's cinema as a whole, thriving as it does between ostensibly incompatible identities of big screen spectacle, digital video disk, and download file, with viewers effortlessly switching between online viewing and visits to the local multiplex, and with the culture at large treating 'the cinema' as part of the urban fabric and *the cinematic* as part of our collective memory and imaginary. In these contexts and definitions the author does not seem to be crucial to the system, being only one of the pieces of information and markers of recognition by which audiences identify a film as worthy of their attention. I would be interested to know whether in the world of games, similar issues have arisen around agency and authorship, especially where the player is of course encouraged to view herself as author, and the game itself is regarded as *the world* out there, rather than as a construct, but where nonetheless the gamer knows she is up against a force or forces that are out to impede, frustrate, threaten, and defeat her.

One answer comes from a blogger specializing in games, citing my articles on AVATAR and mind-game films and extending their argument:

"The control that is essential for any auteur theory is manifesting itself in a new way. [...], Elsaesser argues that Cameron carefully systematizes control of the audience's reactions by presenting mixed signals that induce cognitive dissonances. These dissonances 'provoke the spectator into actively producing his or her own reading, in order to disambiguate the 'mixed messages' or to 'untie the knot of the double bind.' Each spectator, then, arrives at a reading of the text that is at once at odds with the film and with other readings but which results in a stronger "ontological commitment 'on the part of the viewer to his or her particular interpretation—a commitment that works in favour of the affective bond formed with a given film.'

So what does this have to do with video games? It strikes me that this is essentially a description of how interactive media functions with their audience. The narrative contradictions that create this effect—dubbed 'cognitive switches' by Elsaesser—manifest themselves in games as player choice. The dissonance that a filmic auteur like Cameron can choose to create in his audience is inherent in all interactive media by virtue of the changing experience from play-through to play-through. While AVATAR induces different experiences in the spectators' minds, interactive media makes these differences literal in the

text. While an author of interactive media may be able to achieve a level of control that fixes the number available readings, the default mode of creating meaning is one of these cognitive switches because the player is forced to make ontological commitments toward a particular reading with every interactive choice.

Game critics often compare interactive media to filmic media, and we often interpret games using cinematic modes of thinking. Game developers, too, clearly follow many cinematic conventions in structuring their games. Most commonly, this approach manifests itself as a straightforward discussion of narrative structure and visual presentation. [...] But these methods are clearly inadequate for games, which require ludic approaches as well. In games, the spectator is empowered, so we cannot, either in design or interpretation, use only passive approaches in our thinking. [...]

What film critics like Elsaesser make clear, however, is that filmic media, especially within certain recent trends, also create meaning within an active context analogous to that of games. We see this spectator empowerment emerging prominently with the rise in popularity of 'puzzle films' or 'mind-game films'. [...] We thus see that recent films activate the spectator by changing their artistic mode, and this style is partially driven by the multiplatform, database-like way by which we now consume media. Just as cinema has informed how we structure games, there is little doubt that games have changed how we consume cinema."[17]

The post concludes by pointing out that what mind-game films and games have in common is that they empower the spectators/players to become reflexive in relation to their own role and agency, by discovering rule-sets applicable to the respective *worlds*, on the basis of which to make ontological choices, and thus to narrow the gap not so much between cinema and games, but between active interpretation and consumption, between constraints and affordances in respect to a given reality.

17 Evan, "Current Preservation of Games Criticism is insufficient. Can critical Distance help?," in: *Thinking While Gaming*, September 11, 2012, http://www.thinkingwhileplaying.com/2012/09/films-are-interactive-too-spectator.html

TRANSMEDIA NARRATIVE— HENRY JENKINS AND CONVERGENCE CULTURE

More generally, in the discussions around contemporary cinema and media, where interactivity, non-linearity, navigability, scalability, spectacle, and scripted spaces have become the key terms by which to map the future of narrative across different platforms of digital media—ranging from television series, feature films and essay films, to interactive games, alternate reality games, animation films, comic books, graphic novels, and art installations—the term that is in the ascendancy seems to be "transmedia narratives," a phrase inaugurated by Henry Jenkins in his influential *Convergence Culture: Where Old and New Media Collide*.[18] Transmedia narratives, which are themselves a sub-category of what Jenkins calls "participatory culture," try to subsume some of the decades-old debates around intermediality and multimodality, i.e. the way that narratives have always had the tendency to migrate across media. Other new locutions such as *additive comprehension* and *narrative world-building* try to go beyond (narratological) categories such as "metalepsis"[19] and "paratexts"[20] (Gerard Genette's terms for narratives crossing textual boundaries), expanded cinema[21] (Gene Youngblood's term of cross-media cinema in the art and avant-garde sector), or the idea of extended diegesis (the "here-me-now" that I introduced into the debate a few years ago). Jenkins' terms also want to address the questions of audience engagement and subject positions, of how to maintain narrative coherence across different platforms, the phenomenon of narrative expansion in serial formats, as well as how to differentiate between the *viral* propagation of stories and video clips, and the promotion of brands and the marketing of commodities—all of which now takes place across social media as the channels of choice and the platforms of the widest reach and highest penetration.

Jenkins has recently proposed to reframe his transmedia studies and participatory culture within the larger context of "media archaeology," which he sees as neither focused on specific types of technology nor determined by specific narrative formats. Instead, a media archaeology of participatory culture would elaborate and excavate what he calls "the 200 years of grass-root movements

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18 Jenkins, Henry: *Convergence Culture*, New York: New York University Press 2006.

19 Genette, Gérard: *Métalepse. De la figure à la fiction*, Paris: Éditions du Seuil 2004.

20 Genette, Gérard: *Paratexts: Thresholds of Interpretation*, Cambridge: Cambridge University Press 1997.

21 Youngblood, Gene: *Expanded Cinema*, New York: Dutton 1970.

trying to gain access to the tools of cultural production" by tracking the cultural technologies that have enabled content (stories, images, ideas, etc.) to circulate by means of "systems of spreadability," which is his term for mechanical mass reproduction. Not surprisingly, the Gutenberg printing press and texts in the vernacular languages are among his examples, too, so that the printing press becomes (in his terms) "web minus 10.0."[22]

THE CASE OF CAUSALITY: TOOLS AND TASKS

Jenkins' idea of media archaeology for my taste still operates with a rather naïve linear causality, except that it now works backwards. Yet the question of causality is intimately connected with narrative, and thus also has primary relevance to the function of the causal nexus in films and of the causal chains employed in games.

In order to clarify this issue, and resolve some of the discrepancies, it may be necessary to take a more radical approach and ask whether our models of causality are hardwired, as it were, or whether they are mainly a function of the technologies we have at hand. Let us, for the sake of the argument, assume that the latter is the case.

One of the key characteristics of all contemporary media that take their cue from digital media is the attempt to break with models of linearity, which also means challenging Newtonian notions of causality, where actions and events are plotted along a single continuum of cause and effect. A line of argument made famous by Friedrich Kittler—who extrapolated it from Michel Foucault—was to claim that a historiography that relies on chronological narratives merely reflects the cultural technology of writing and script, and thus is based on print as its primary medium, thereby proving itself not to be universal or hardwired, but historically determined.[23] If historians have—until quite recently—been reluctant

22 Jenkins, Henry/Greene, Joshua E.: *Spreadable Media: Creating Value and Meaning in a Networked Culture*, New York: New York University Press 2013. Cf. Lyczba, Fabrice: "Conference Report: Contemporary Screen Narratives (University of Nottingham, 2012)," in: InMedia 2 (2012), http://inmedia.revues.org/482; Cf. Scolari, Carlos/Bertetti Paolo/Freeman, Matthew: *Transmedia Archaeology: Storytelling in the Borderlines of Science Fiction*, Basingstoke: Palgrave Macmillan 2014.

23 As Wolfgang Ernst puts it: "The crucial question for media archaeology, then, resides in whether, in this interplay between technology and culture, the new kind of histori-

to accept as valid evidence material that could not be presented in the form of written documents or printed sources, this surely cannot be right for a media history that encompasses the optomechanical medium of cinema, the electric media of telephony and television, and the electronic-algorithmic media of the digital era.

At first glance, then, a breakup of monocausality would appear to be a liberating move, one that takes more accurate account of contingency in human affairs, and of actions having unforeseen consequences. However, by the same logic that tries to overturn linearity by pointing to its technological underpinnings, the case can be made that philosophical arguments that favor the idea that 'contingency is our new causality' are at least in part also the superstructural elaborations—the ideology, to use this old-fashioned term—of the technologies that are now in use and that we are increasingly dependent upon. On the other hand, such a charge of ideology can overlook the extent to which changes in our idea of causal relations are also due to different environmental challenges or may arise in order to meet specific practical problems.

A change in media technology, so this extended Kittlerian argument would go, has always brought with it a change in models of reality, in models of the mind, and in the conceptual means by which we interpret both mind and reality. No concept of God as a watchmaker would have emerged without the invention of the mechanical timepiece; no Descartes could have divided the world into *res cogitans* and *res extensa* without the invention of the telescope.

By the same reasoning, it is plausible to argue that the contemporary preference for coincidence and contingency over linear cause and effect chains reflects and aligns itself with such eminently cinematic techniques as montage and the cut, indicative of the presence of the cinema, even where it is not explicitly invoked. Likewise, there are suggestive parallels between *repetition and difference* as a way of deconstructing history (as both Gilles Deleuze and Niklas Luhmann have done), and the manner in which digital images do not follow each other in succession, but remain the same and are merely refreshed, with only a portion of the pixels being replaced with different numerical values. The use of causally motivated narratives for rendering and representing the past in the form of *histo-*

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cal imagination that emerged was an effect of new media or whether such media were invented because the epistemological setting of the age demanded them," in: Ernst, Wolfgang: *Digital Memory and the Archive*, Minneapolis: University of Minnesota Press 2013, p. 42.

ry is a relatively recent attainment,[24] compared with the much longer prevalence of the memory arts, of history in the form of myths, allegories, memoirs, sagas, and chronicles—all of which often function in non-linear ways or are conceived as *open forms* that deliberately avoid mono-causal explanations or proof, in favor of enumeration, reversible causal relations, and the accumulation of emblematic events.[25]

There is thus more at stake than singular causality. Conventional notions of history as the most accurate accounts of what happened, how and why (or *who did what to whom, when, where and why*) are now in competition with probabilistic calculations, for which the past is primarily an accumulation of data that can be usefully analyzed for recurring patterns, which in turn are winnowed down and aggregated in order to calculate probable outcomes. Such post-positivist theories of history thus cut both ways. While they might appear at first glance to finally take serious account of contingency in human affairs, by seeking to control or contain it, the discovery of meaningful patterns nonetheless turns unforeseen consequences retrospectively into causal agents not only in order to eliminate what might have been, in favor of what has been, but also in order to predict and preempt the future, which makes probability studies or risk assessment a form of reverse-engineered history.

On the other hand, looked at operationally, causation as we apply it to past events and dignify with the name of history is nothing other than an organizing principle. Therefore, it may well be dependent on models of the mind and conceptions of the world that are themselves dependent on both *the tasks at hand* and *the tools at hand*. If the nature of the phenomena, or the size and quantity of the material that an ordering principle is supposed to keep under control, changes dramatically, the ordering principle itself may have to be adapted or even be replaced altogether. Thus, given that the amount of data now gathered about the

24 On the narrativization of historiography, besides White, Hayden: *Metahistory: The Historical Imagination in Nineteenth-Century Europe,* Baltimore: Hopkins University Press 1973, see Elsaesser, Thomas: *A Comparative Study of Imagery and Themes in Thomas Carlyle's and Jules Michelet's Histories of the French Revolution*, PhD Dissertation, University of Sussex 1971.

25 Ernst, Wolfgang: *Digital Memory and the Archive*, Minneapolis, London: University of Minnesota Press 2012, pp. 147-157. Cf. Ernst, Wolfgang/Farocki, Harun: "Towards an Archive for Visual Concepts," in: Thomas Elsaesser (ed.), *Harun Farocki: Working on the Sight-Lines*, Amsterdam: Amsterdam University Press 2004, pp. 261-286.

world by cameras, sensors, probes, telescopes, microscopes, and similar (digital) devices has risen exponentially, this poses precisely the problem of whether classical causality as an organizing principle is still adequate or appropriate. At the same time, because we can use computers as our organizing machine, we will use the computer as organizing machine—and computers, as the tools at hand, are better equipped than humans to deal with contingency and random access, with correlation and pattern recognition, when faced with such masses of data and information.

But a change in organizing principle (in this instance, causality) is also a matter of the *tasks at hand*. In his account of causality in modern science, Robin McClintock argues that, up to around 1950, causal explanation dominated research:

"Researchers looked for causes in an effort to predict effects, expecting thereby to gain an 'if-then' ability to produce desired outcomes. The results were wondrous in physics, chemistry, biology, and psychology and in their application through industry, technology, and medicine."

However, in the latter half of the twentieth century, scientific research focused on more complex systems with complicated dynamics: "Here causes and effects are both bi-directional and manifold. The researcher recognizes that numerous phenomena are taking place simultaneously within an extended time and area." The problem for the researcher becomes one of modelling this complex system, not only to understand its complexity, but also in some cases to control it. McClintock lists the study of "ecologies, climate changes, environmental pollution, weather, macroeconomics, and large-scale social change" as prominent examples. He concludes that "[t]he human payoff of these studies is not in the ability to produce predictable effects through a given action, but the ability to anticipate complex interactions and to exert adaptive control within them."[26]

Consequently, a theory of history or practice of narrative that starts from the heterogeneous, multidimensional, and multidirectional nature of agency and interaction, already reflects the likelihood that today it is easier to work with contingency than with monocausal chains and that modelling multiple determi-

26 McClintock, Robin: "Social History through Media History," review of *A Social History of the Media: From Gutenberg to the Internet*, by Briggs, Asa and Burke, Peter: *A Social History of Knowledge: From Gutenberg to Diderot*, in: *robbiemcclintock* July 16, 2002, http://robbiemcclintock.com/shelving/E-02a-R-BnB-7-CivLife.html

nations—or *multiple variables in simultaneous interaction*—is not only more plausibly part of the Zeitgeist, *but it is also faster and cheaper*.

To return to my initial question: what is or was the cinema good for? It is more than likely that these new parameters of how we look at causality and contingency (and by extension, contiguity and constellations) will affect the practice of narrative across the board, i.e. across the different platforms, modes, and formats. But does this mean we should endorse, after all, the *death of cinema*, or rather, accept its historical function as an intermediary—what Zielinski called "intermezzo" and Uricchio a "detour"? Was cinema no more than an intermediary stage between the visualization of natural phenomena previously imperceptible to the human eye (which is what chronophotography did, as understood by Eadweard Muybridge and Etienne-Jules Marey) and the coding, compression, transmission of information no longer graspable by the human mind, and which therefore now needs an interface more like a game platform rather than a conventional narrative? The possibility may seem scandalous, for it would retroactively redefine narrative cinema as merely the *historically contingent* 'database' and 'memory' of our culture, superseded by new kinds of formatted memory. However, cinema would also be unique because it inscribed the perceiving observer into the impersonal data flow across a given timeline.

This embedded observer implicates narrative cinema in the last major cultural shift in the larger default values of Western visual perception: the introduction of the central perspective, beginning in the 1450s in Italy, and generally identified with the European Renaissance. By the end of the 15th century it was the religious painters that acted as the mediators of the new ways of seeing: first depicting Heaven and the Almighty in altar pieces, and then far distant sights, producing a possibly unintended consequence; namely, that perspectival projection, which after all, had God as the vanishing point to secure the validity of representation, de facto contributed to secularization. Today, by contrast it is popular entertainment, games and the movie industry that act as a kind of collectively elaborated template or interface, inaugurating a paradigm shift, with perhaps equally unintended or at least unpredictable consequences.

Consider the following: the extension of our spatially configured visual and aural environment, such as we experience it in data-rich augmented realities, is symptomatic of the rise of the surveillance paradigm, which—taken in its widest sense—is materially affecting our understanding and engagement with images and visual information offline and online: in either case, *to see is to be seen, to act is to be tracked*. Contemporary cinema, insofar as it participates in this hybridity of visualization, virtualization, and action, plays a duplicitous role. While it cognitively and bodily empowers the users and spectators, it also increasingly

releases them from responsibility and consequence: an ethical challenge we are only beginning to become aware of.

On the other hand, once images are no longer considered by our culture as *views*, i.e. something to be *looked at* or to be contemplated, but more like *clues*, i.e. as instructions for action, to be *clicked at*, then they undo something that Renaissance perspective accomplished, namely to banish the magic powers of images to act and be acted upon, which the Christian religion made ample use of, when the magic of the painted saints (to heal, to console, to intercede, and to protect) was a function of their fixture to an actual site, i.e. as murals and frescos in churches or monasteries. What is now being instrumentalized is a different kind of agency in images, perhaps no less magical (in their effects of mimetic embodiment, of viral proliferation, shock and horror).

If this new regime of embodied vision, with the image as an agent or trigger for action, implies that we are once again—as in the Middle Ages—sharing the same physical space with the image and are no longer separated by a frame (whether functioning as window or as mirror), but rather like a door or portal, then notions of representation and projection, both key elements of Renaissance perspectival space, would have to be abandoned, in favor of an ontology of immediacy, presence and transition. We would indeed experience a shift in both paradigm and episteme, one for which the artist Hito Steyerl has coined the term "vertical perspective": "Imagine you are falling. But there is no ground." What in the context of the revival of 3D, I have elsewhere analyzed as a predilection for horizon-less images, where floating and gliding are more appropriate than sitting down or standing upright, Steyerl radicalizes into the condition of "being in free fall," thus taking it from the aesthetic realm into the political. She argues that when we fall, we feel as if we are floating, or not moving at all, because: "falling is relational: if there is nothing to fall towards, you may not even be aware that you are falling. [...] Whole societies may be falling just as you are. And it may actually feel like perfect stasis." Steyerl goes on to explain:

"Our sense of spatial and temporal orientation has changed dramatically in recent years, prompted by new technologies of surveillance, tracking, and targeting. One of the symptoms of this transformation is the growing importance of aerial views: overviews, Google Map views, satellite views. We are growing increasingly accustomed to what used to be called a God's-eye view. On the other hand, we also notice the decreasing importance of [...] linear perspective. Its stable and single point of view is being supplemented (often

replaced) by multiple perspectives, overlapping windows, distorted sightlines, and divergent vanishing points."[27]

Vertical perspective inaugurates a free-floating presence, immaterial and invisible as well as ubiquitous and omnipresent. As symbolic form or as new episteme, however, it is as much a set of formalized conventions as was linear perspective, which implicitly pretended that the earth was flat and man was the only creature that mattered in the eyes of God. Now the sense of ubiquity, simultaneity, and omnipresence compensates for us being a mere speck in the universe, enmeshed in networks of plotted coordinates, tracked and traceable at every point in space or time, and suspended in an undulating, mobile, variable *inside*, to which no longer corresponds any *outside*, however vast, rich, and connected such an inside (or online) world seems to be.

The challenge would then be how to live in the bubble while still finding ways to prick and puncture it: will it be game spaces offering us multiple paths and several lives that can lead us beyond, or is it the cinema as thought experiment that makes *mind-games* out of the very condition of its own (im)possibility: teaching its audiences new rules while it is simultaneously learning these rules itself? Or just maybe cinema and games—assuming that one is translating images into actions, the other actions into images—are the recto and verso of each other, and headed for the same destination after all?

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MEMENTO (USA 2001, D: Christopher Nolan)

More About EVERYTHING

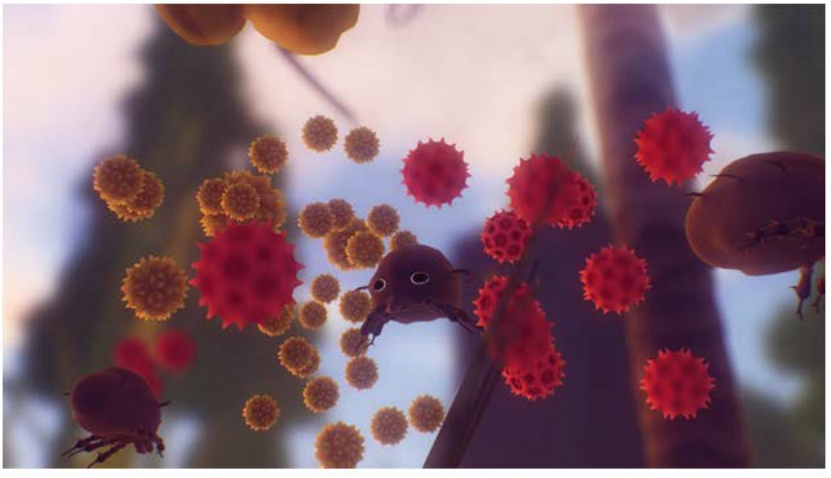
DAVID O'REILLY

EVERYTHING is an interactive experience where everything you see is a thing you can be, from animals to planets to galaxies and beyond. Travel between outer and inner space, and explore a vast, interconnected universe of things without enforced goals, scores, or tasks to complete. EVERYTHING is a procedural, AI-driven simulation of the systems of nature, seen from the points of view of everything in the universe.

Learn to change what you are to create worlds within worlds within worlds, or let go any time to allow EVERYTHING to take over and produce a never-ending documentary about the world you live in. Narrated by the inspiring philosophy of Alan Watts, and featuring a rich score from composer Ben Lukas Boysen, EVERYTHING will give you a new perspective on life.

The following text consists of excerpts drawn from the transcript of my keynote address at the *Clash of Realities Conference* on November 16, 2016 in Cologne, Germany. The illustrations are taken from EVERYTHING.

The game is basically expanding our idea of nature. Most of us think of nature as trees and plants and things like that, but EVERYTHING *expands this idea to encompass cities and all of human activity. The more we expand this idea of nature, the less confusing and chaotic the world becomes. You have processes and systems, and not random events.*



I would say reality itself isn't necessarily fixed connections between things. It's changing dynamic relationships. And so outside of physics we don't have that many constants. Everything is changing over time. So what's unique about games for me is describing dynamic relationships between things.

Point of view is interesting because it's not only the angle from which you look at something, but it's also how you think about something. It's both your ideology and your visual perception; it's both a physical and a cognitive thing.

The game is essentially designed to expand the idea of what we are from this narrow thing to everything in the universe. To give players other points of view, quite literally. And to show that this idea of identity can expand, contract, and transform.

That's the moment to moment play experience of the game: We can enter things and then become them. Even though I approached this project as entertainment, I don't see it as a kind of fantasy, as a kind of hyper reality. Rather it gives us a different way of looking at ourselves as well as a way of seeing how our situation as humans affects our interpretation of the world.

It seems obvious that the more narrowly we define ourselves, the more we're going to feel alienated and threatened by the things around us. The more we are one thing, the more we're not other things. And the more fixed the idea of ourselves is, the more frustrated we're going to be when there's a change in the environment. I think this is happening a lot right now in the world.

The wider our idea of ourselves is, the less potential there is to see the world as something to fear.

My contention and the contention of the game and what it's trying to express is the world that we live in is the most interesting that there could be. We simply couldn't imagine anything more amazing than it.

CORE TEAM OF EVERYTHING

Creator: David OReilly
Programmer: Damien Di Fede
Sound: Eduardo Ortiz Frau
Music: Ben Lukas Boysen & Sebastian Plano

Play, Games, and the Good Life

MIGUEL SICART

In the closing chapter of *Homo Ludens*, Johan Huizinga famously claims that play is "in itself neither good nor bad," that it is "outside morals",[1] an argument that highlights the complicated relations between play and ethics. In these days of gamification and videogames, in which digital playful experiences are ubiquitous, the question of the relation between play and ethics is more urgent than ever.

In this short piece, I want to go beyond the potential moral dangers of computer games culture in order to question how play is valuable for our well-being.[2] I want to argue here that play is a moral activity that can contribute to our flourishing as human beings. In terms of Virtue Ethics, play is a central element of a good life. The objects we play with, from games to toys, are part of a constellation of technologies that ought to be analyzed as part of the way we develop our moral being by playing.

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1 Huizinga, Johan: *Homo Ludens. A Study of the Play-Element in Culture,* Boston: Beacon Press 1992.

2 Sicart, Miguel: *The Ethics of Computer Games*, Mass.: The MIT Press 2009; Sicart, Miguel: *Beyond Choices: The Design of Ethical Gameplay*, Mass.: The MIT Press 2013; Deci, Edward L./Ryan, Richard M.: "Hedonia, Eudaimonia, and Well-being: An Introduction," in: *Journal of Happiness Studies* 9, no. 1 (2008); Ryan, Richard M./Huta, Veronika/Deci, Edward L.: "Living Well: A Self-determination Theory Perspective on Eudaimonia," in: *Journal of Happiness Studies* 9, no. 1 (2008), doi:10.1007/s10902-006-9023-4.

Play is not a morally neutral, or even a morally positive activity. There are ethical risks when we play, in excessive play,[3] in addiction,[4] in deep play.[5] However, play is important for the moral fabric of society not only despite its potential risks, but also *because* of these risks. Playing is learning to navigate, playfully and deeply seriously, our own being in the world. Because play is dangerous,[6] and because it is also a creative, human form of expression, it has value for us, it makes us better human beings. To play, as an expressive, appropriative form of being in the world, is to assert ourselves in the world creatively, to explore it under rules we have accepted as valid, we have agreed to submit to or we have ourselves created.

Let's take for example the case of Joseph DeLappe's ***dead-in-iraq***,[7] a performance art piece in which DeLappe logs onto the videogame AMERICA'S ARMY[8] and starts writing the name of deceased soldiers in Iraq. This fleeting memorial inserted in the context of a propaganda game shows how play as an appropriative, moral experience, can even take over games. A game is a technology designed to facilitate specific types of play, but play as a generative activity, as a form of expression and of resistance, can overcome those design constraints and turn the game into a form of expression in and of itself.

To explain this capacity of play to be appropriate and expressive, and to situate it within the context of ethical theory, I am taking a constructivist ethics approach.[9] Ethics is a practical science that helps us develop as human beings by practicing virtues. To be a morally sound human being we must develop our potential, we must exercise, practice, test and expand our virtues, from empathy to love, to courage.[10] We are ethical beings because we can develop those virtues

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3 Caillois, Roger: *Man, Play and Games*, Urbana/Chicago: University of Illinois Press 2001.

4 Schüll, Natasha Dow: *Addiction by Design: Machine Gambling in Las Vegas*, Princeton: Princeton University Press 2012.

5 Geertz, Clifford: "Deep Play: Notes on the Balinese Cockfight," in: *Daedalus 101*, no. 1 (1972), pp. 1-37.

6 Schechner, Richard: "Playing," in: *Play & Culture* 1 (1988), pp. 3-19; ibid., *Performance Studies. An Introduction*, New York and London: Routledge, 2006.

7 DeLappe, Joseph: ***dead-in-iraq***, http://www.delappe.net/project/dead-in-iraq/

8 AMERICA'S ARMY (United States Army 2002, ●: United States Army)

9 Bynum, Terrell Ward: "Flourishing Ethics," in: *Ethics and Information Technology* 8/4 (2006).

10 Aristotle: *Nichomachean Ethics*, Oxford: Oxford University Press 1998.

through time and practice. That practice takes place in all instances of life: when we work, we love, when we are idle and when we exhaust ourselves.[11] A way of understanding this active, constructivist approach to ethics is to think about morality as another way of being in the world, one that determines how we engage with others and how we take decisions.

This is particularly important when we look at technology and the way it mediates our experience of the world. If this experience is what we are trying to structure morally by developing judgements and values that help us navigate our relation to the world, then understanding the role of technology in that experience is crucial. The 2016 USA elections showed how our news consumption, mediated by algorithm, might not contribute to the ideal of democratic elections derived from the Enlightenment. Questioning that technological mediation allows us to think more critically about how we develop moral discourses. I would claim that seeing how play can be a form of appropriating these mediating technologies to subvert them provides us with an interesting starting point to understand the way play is fundamental for a constructivist ethics.

Play is a way of being in the world that appropriates, and is sometimes mediated, by objects, things and circumstances. In this sense, the importance of playthings in our betterment is obvious: things and devices can help us play a good life.[12] But here we find too the problem that the Huizingian theory of play poses: if play is considered to be outside the domain of ethics and morality, even though we acknowledge that it does foster some virtues,[13] its very lack of seriousness and lack of productivity condemn it as an empty leisurely act. If play is outside morals, the acts of play are also devoid of moral weight, detached from our moral being.

I claim that we need to leave behind the idea of play as something that happens separate from the world; as something that has its own seriousness that is not affected and does not affect the contexts and objects through which it is manifested. Play is valuable *because* it is appropriative, expressive, and disruptive—the values of play reside in the way play allows us to explore, train, and develop our best potential as human beings. Given that ethics is a way of being in the

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11 Burke, Richard: "'Work' and 'Play'," in: *Ethics* 82/1 (1971), pp. 33-47.

12 Waterman, Alan S./Schwartz, Seth J./Conti, Regina: "The Implications of Two Conceptions of Happiness (Hedonic Enjoyment and Eudaimonia) for the Understanding of Intrinsic Motivation," in: *Journal of Happiness Studies* 9/1 (2008).

13 Sutton-Smith, Brian: *The Ambiguity of Play,* Cambridge, Mass.: Harvard University Press 1997.

world that underlies all of our actions, activities and ideas, its relation with play should be obvious. The ethics of play should be then seen as *the value* of play, the way in which, through play, we live a good life.

Games like UNDERTALE[14] or the FALLOUT series[15] show how important it is for players to have a sense of moral agency in the worlds they play in. Many players understand that playing is also a way of engaging morally with the world, either with the world outside the game as mediated by a game, or in the world of the game. The playful take on solving problems of the *New Games Movement* has evolved into Harry Josephine Giles and Paolo Pedercini's *Casual Games for Protesters*,[16] but they are both explorations of the critical role of play in engaging with the world and exploring new ways of thinking, and of addressing moral issues, through the activity of play.

This is not to say that all play is good, that there are no moral risks with play. Play can seduce us; through playthings we can forget that play is just a mode of being in the world, and we can lose the relative distance between the action and the context that we need for play to be ethically and culturally valuable.[17] Play can become an addiction, the only mode of being in the world, not allowing us to develop relations that are not established through play.

And not only addiction can become a problem. The rise of internet trolling is an example of how dark play has powers over the world. Dark play is any play activity intended to harm others who are dragged into play without their consent. Shielded by "the lulz" and by the "it's just a game" excuse, internet trolls have advanced an ideology of hate and discrimination that feeds on their playful strategies to take over the world. Only when we recognize that trolling is a damaging form of play, and that play can be hurtful, can we then properly assess the ethical potential of play and provide solutions to the moral problems created by play itself.

For us to be able to develop our potential as moral beings, to develop virtues and become *better human beings*, we need play. In fact, play is a fundamental part of the well-being, of the healthy and mature and complete human life. In

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14 UNDERTALE (Toby Fox 2015, ●: Toby Fox)

15 FALLOUT series (Interplay, 14 Degrees East, Bethesda Softworks 1997-2015, ●: Interplay, Black Isle Studios, Bethesda Game Studies, ●bsidian Entertainment)

16 Giles, Harry Josephine/Pedercini, Paolo: *Casual Games for Protester,* http://www.protestgames.org

17 Henricks, Thomas S. : *Play Reconsidered. Sociological Perspectives on Human Expression*, Urbana and Chicago: University of Illinois Press 2006.

Huizingan play, we almost take for granted the importance of play, yet we keep it separate from the world, we seclude it in its own seriousness, in its own environment.

We need play because we need occasional freedom and distance from our conventional understanding of the moral fabric of society. Play is important because we need to see values and practice them and challenge them so they become more than mindless habits. Games, toys, playgrounds, they are all instruments that allow us to explore, enact, and develop our own different understandings of morality, not because they are separate from the real world, but because they are things we play with.

When play is *about* ethics, it is so because it appropriates and explores values. But play should not be reduced to being ethically significant when it *explicitly* addresses morality. Like any other way of experiencing and expressing the world, play is *always* moral. Play is the expression of a moral being in a world.

Play is important for our moral life because it can turn our own assumptions and ethical principles into props for play. Play gives us distance to, but also engagement with, our own moral fabric. To live a balanced life, to explore and become who we can become and flourish as ethical human beings, we need to understand our values and principles. And play, because of its appreciative nature, allows us to do precisely that: appropriate, estrange us from our own moral being, and allow us to explore what our values are.

We *need* to play in order to be better human beings. There is much talk and importance given to games and other playthings as *important* because they can address serious topics. But that is an unnecessary argument: play in itself is already important and necessary for living a good life. The values of play reside in how play can appropriate all of the former, and let us explore their meaning. Play is necessary to be human not only because as humans we play, but also because through play we better express what it means to be a moral human being.

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AMERICA'S ARMY (United States Army 2002, O: United States Army)

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UNDERTALE (Toby Fox 2015, O: Toby Fox)

II.1 Game Studies Summit

Introduction

BENJAMIN BEIL, GUNDOLF S. FREYERMUTH,
HANNS CHRISTIAN SCHMIDT

The aesthetic desire for the fusion of different media seems to be as old as modernity. Limited by its materiality, analog media could hardly fulfill this longing. Software, however, is by definition transmedial. Thus, with the transition from industrial to digital culture, the borders previously set by technology between media began to fade. Not surprisingly, digital games—as a new, genuinely digital form of expression and representation—realize the technological potential for transmediality more than any other cultural software. Games operate transmedially in that they utilize both a variety of media for their own design as well as incorporate works from other media, from paintings to radio shows to motion pictures. Furthermore, digital games are primed for integration into extensive transmedial contexts, both artistically and economically.

In 2016, the Game Studies Summit set out to develop a theoretical conception of digital games as 'transmedia works of art' and to determine their position in the evolving digital media dispositif. In his introductory overview "Transmedia Storytelling. Twelve Postulates," Gundolf S. Freyermuth positions transmedia in the context of modern media history and then investigates contemporary procedures and effects of transmedia storytelling. The following contributions explore specific aspects of transmedia storytelling in and with digital games. Mark J. P. Wolf compares the imaginary worlds of video games with older analog imaginary worlds—such as dollhouses, model train sets, military simulations, and, of course, board games—with particular regard to detail and depth as well as embedded and explicit narratives and history ("Worlds Apart?: Game Worlds versus Other Imaginary Worlds"). James Newman, in "Playing with Star Wars," gives a short history of transmedia projects in the STAR WARS

Universe and then focuses on the expanding transmedia world of LEGO STAR WARS.

While all storytelling requires the manipulation of time and space, the development and reception of transmedia worlds are characterized by specific intradiegetic as well as extra-diegetic considerations and implications. In her contribution "Time, Memory and Longing in Transmedial Storytelling," Susana Tosca examines a dimension of transmedial time that transcends the individual components of transmedia worlds: the personal time of the recipients. Focusing on space, Hanns Christian Schmidt demonstrates three approaches related to the question of how to adapt a pre-existing story world to the interactive medium of the video game: a production aesthetic, a reception aesthetic, and a media aesthetic ("Playing with Stories, Playing in Worlds: Transmedia(l) Approaches to Video Games").

Connecting the discussion of video games as an art form to the broader frame of transmedial phenomena, Andreas Rauscher, in "A Game of Playful Art," outlines three perspectives—transmedia auteurs, genre settings, and the cineludic form—that expand the rather plot-orientated terminology of transmedia storytelling and combine the discourse on participatory culture with methods from film studies, genre theory, and cultural studies. Finally, Federico Alvarez takes a close look at the RESIDENT EVIL HD REMASTER (2015) through the psychological lens of delayed gratification, time perspective, and temporal discounting, thereby providing a coherent framework to analyze how players interact with the survival horror genre specifically and video games in general.

The 2015 Game Studies Summit concerned itself with the question: How and in what ways can digital games find their place in lecture halls and seminar rooms? While the creative-artistic discipline of Game Design has been able to establish itself within the university system, the institutionalization of the theoretical-historical discipline of Game Studies in humanistic and cultural studies has been rudimentary at best. In several case studies, the speakers of this Summit took a closer look at successful (and less successful) interdisciplinary collaborations, the interaction of Game Studies and Game Design (Theory), and the varied influences from other Art and Media Art disciplines, like the studies of literature, art history, music, theater, film, and media in general.

Of particular interest was Frans Mäyrä's case study "Experiences and Lessons from Tampere." In his article, Mäyrä retraces the complex process of implementing (digital) games research in the curriculum of the University of Tampere (UTA), one of the largest universities in Finland. Based on a three-pronged approach featuring Game Analysis (Humanities), Player Research (Social Science), and Game Design Studies (Design Research), the UTA model of game

education reflects the multiplicity and complexity of different kinds of games, play forms, and player motivations. At the same time, the UTA model illustrates the importance of interdisciplinary collaborations, which are, as Mäyrä emphasizes, the key to establishing the academic identity of Game Studies.

Transmedia Storytelling

Twelve Postulates

GUNDOLF S. FREYERMUTH

> "Only he who perceives the indices and signatures of the archaic in the most modern and recent can be contemporary."
> GIORGIO AGAMBEN[1]

Transmedia storytelling happens in a wide range of cultural production environments: from commercial endeavors that gross billions of dollars to avant-gardist experiments depending on grants and other subsidies. At the popular end of the spectrum are globally distributed story worlds like JAMES BOND,[2] LORD OF THE RINGS,[3] STAR TREK,[4] STAR WARS,[5] HARRY POTTER,[6] RESIDENT EVIL,[7] or ASSAS-

1 Agamben, Giorgio: *"What is an Apparatus?" and Other Essays*, Stanford, Calif.: Stanford University Press 2009.

2 Novels since 1953, TV adaptations since 1954, feature films since 1962, digital games since 1983.

3 Novels since 1954, radio adaptations since 1955, animated films since 1978, digital games since 1982, feature films since 2001.

4 TV series since 1966, board games since 1967, novels since 1968, digital games since 1971, animated TV series since 1973, feature films since 1979, theme park attractions since 1998.

5 Novels since 1976, feature films and comics since 1977, games since 1978/79, theme park attractions since 1987, animated films since 2003.

6 Novels since 1997, feature films and games since 2001.

7 Digital games since 1996, novels and comics since 1997, animated movies since 2000, feature films since 2002.

SIN'S CREED,[8] composed of dozens of medial elements: novels and non-fiction books, feature films, animated movies and TV series, theater and radio plays, analog and digital games, comic books and graphic novels, soundtracks, toys and other merchandise, from clothes to meals, websites, blogs, social media like Facebook pages or Twitter streams as well as the professional support of online fan communities.

The opposite end of transmedia storytelling is characterized by low-cost Indie productions, like Lance Weiler's HEAD TRAUMA[9] or Timo Vuorensola's IRON SKY,[10] and also by documentary projects, like Katerina Cizek's multimedia documentary HIGHRISE.[11] These transmedia works—mostly made possible by supportive private and public organizations or (co-) financed by crowdfunding—usually concentrate on a smaller range of media, in particular films, videos, books, or digital games. Starting in the pre-production phase, they also try to build supporting communities through social web activities, blogs, YouTube channels, Tweets or e-books.

Between these extremes thrive medium-sized transmedia projects, grouped around so-called tent pole productions; a movie or, more often, a TV series. What they offer in addition to their main medium usually fluctuates between genuine extensions of the original story and pure marketing. Important pioneers were the ABC TV series LOST[12] and the Swedish TV series THE TRUTH ABOUT MARIKA;[13] a more recent example is the SyFy series DEFIANCE.[14]

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8 Digital games since 2007, novels and comics since 2009, first feature film 2017, TV series announced.

9 USA 2006—feature film, second screen experience, cinema alternative reality game (ARG); http://lanceweiler.com/head-trauma/

10 Finland et al. 2012—feature film, comic, board game, digital game; http://ironsky.net

11 Canada, since 2009—several documentaries, an interactive documentary web installation, behind-the-scenes-documentary, documentary featuring other international examples etc.; https://en.wikipedia.org/wiki/Highrise_(documentary)#The_Thousandth_Tower_.282010.29

12 LOST (USA 2004-2010, ©: J.J. Abrams); in addition to the series' episodes: website, webisodes, podcasts, videogames, alternate reality game, toys, novels, encyclopedia, merchandizing.

13 THE TRUTH ABOUT MARIKA (SV 2007, P: SVT); in addition to the series' episodes: TV talk show, website, massively multiplayer online game, alternate reality game.

Transmedia storytelling, and its successful use in popular entertainment in particular, became possible only in the last few decades—obviously as a result of the digitalization of culture, i.e., the implementation of digital media production and digital networking as the technological foundation for global on-demand distribution and consumption. The desire for transmedia experiences, however, as well as—mostly futile—attempts to create them with analog means reach back to the very beginning of modern times. Thus, to understand the importance and specificity of today's digital transmedia, we need to position it in the context of modern media history.[15]

With my first six postulates, I will try to reconstruct the development of transmedia storytelling, from early utopian visions that more anticipated than created transmedia experiences, to the technological and cultural origins of the digital transmedium in the second half of the 20th century, to the shaping of two distinct variants of transmedia storytelling around the turn of the 21st century. Postulates seven through twelve will then deal with the most important procedures and effects of transmedia storytelling as we know it today.

I. THE MODERN DESIRE FOR TRANSMEDIA

The aesthetic concept of a fusion of different media has its historical roots in the experience of its opposite: the separation of media which was the result of mechanization in early modernity. Particularly, the new modern image space created through the implementation of linear perspective was based on the principle of

14 DEFIANCE (USA 2013-2015, P: Scott Stewart); in addition to the series' episodes: website, massively multiplayer online game for consoles and PC, apps for various mobile devices.

15 Different versions of parts of this paper have already been published; in English: Freyermuth, Gundolf S.: *Games | Game Design | Game Studies: An Introduction*, Bielefeld: transcript 2015; Freyermuth, Gundolf S.: "From Analog to Digital Image Space: Towards a Historical Theory of Immersion," in: Burcu Dogramaci/Liptay Fabienne (eds.), *Immersion in the Arts and Media*, Amsterdam: Rodopi 2015, pp. 165-203.; in German: Freyermuth, Gundolf S.: "Der Big Bang digitaler Bildlichkeit: Zwölf Thesen und zwei Fragen," in: Gundolf S Freyermuth/Lisa Gotto (eds.), *Bildwerte: Visualität in der digitalen Medienkultur*, Bielefeld: transcript 2013, pp. 287-333; Freyermuth, Gundolf S.: "Intermedialität Transmedialität," in: *figurationen. gender literatur kultur* 2 (2007), pp. 104-177.

separation: first, the separation of the image from the new textual space that came into existence at the same time through the invention of printing with moveable letters; second, the separation of images from either the environment or reality in the shift from fresco to panel painting and particularly in the new habit of imitating the window view through the use of hardware framing; third, the separation from the audience through means of distancing, through spatial distance as well as physical concealment through the use of curtains, wooden doors, and glass panels. Similar separation characterized modern audiovisuality; the theater with its picture frame stage and analog film with its screen as, for example, Sergej Eisenstein argues in his essay "On Stereocinema."[16]

This first mechanical and later industrial separation of media—or rather, from the perspective of the contemporaries, the separation of the arts based mainly on the different materials used to store, distribute, and receive their content—awoke compensatory longings and desires. Consequently, with the popularization of mechanical media, compensatory desires, visions, and experiments with more immersive media evolved. In the 17th and 18th centuries, endeavors as diverse as the utopian conception of the total work of art, Curiosities Cabinets, trompe l'oeil frescoes, and the Panorama tried to overcome the limitations of representation within the analog image space.[17] At the latest in the 18th century the concept of the 'total work of art' advanced to become an epochal utopian idea striving for a fusion of all the arts that were separated under mechanical conditions—a merger of "architecture, perspective, painting, mechanics, the art of dancing, actio oratoria, moral, history, poetry, and above all music," as Johann Mattheson proposed in 1744.[18] This long-time desire found its first partial realization with Richard Wagner's opera spectacles though still with mostly pre-industrial means, and it found a second and technologically more advanced

16 Eisenstein, Sergei: "On Stereocinema" (*1947), in: Dan Adler/Janine Marchessault/Sanjaz Obradovic (eds.), *3D Cinema and Beyond*, Bristol, UK: Intellect Ltd 2014, pp. 20-59.

17 See Stafford, Barbara Maria/Terpak, Frances/Poggi, Isotta/J. Paul Getty Museum: *Devices of Wonder: From the World in a Box to Images on a Screen*, Los Angeles: Getty Research Institute 2001; Oettermann, Stephan: *The Panorama: History of a Mass Medium*, New York: Zone Books 1997.

18 Johann Mattheson, *Neueste Untersuchung der Singspiele* (1744), cited after: Neumann, Alfred Robert: *The Evolution of the Concept Gesamtkunstwerk in German Romanticism*: Microfilm. Ann Arbor, Mich, University Microfilms, 1951. 1 reel 1951, p. 12.

realization in the first half of the 20th century with the color (and sound) film. However, even this new industrial medium did not offer the level of immersion that the theoreticians of the utopian idea of the 'total work of art' envisioned.

A variety of aesthetic and technological concepts that became popular during the second half of the 20th century bear witness to the persistence of the perceived lack of transmedia experiences: from Andre Bazin's early hope for a "total cinema"[19] to Alan Kays clear-sighted definition of software as a "meta-medium"[20] to Gene Roddenberry's popular vision of an interactive and even tactile "holodeck"[21] to Roy Ascott's avant-gardist demand—alluding to the Wagnerian term "Gesamtkunstwerk"—for a "Gesamtdatenwerk":

"Increasingly, as artists we are impatient with single modes of operation in dataspace. We search for synthesis of image, sound, text. We wish to incorporate human and artificial movements, environmental dynamics, ambient transformations, altogether into a more seamless whole. We search, in short, for the Gesamtdatenwerk."[22]

19 Bazin, André/Gray, Hugh: *What Is Cinema?*, Berkeley: University of California Press 1967.

20 Kay, Alan/Goldberg, Adele: "Personal Dynamic Media," in: Noah Wardrip-Fruin/Nick Montfort (eds.), *The New Media Reader*, Cambridge, Mass.: MIT Press 2003, pp. 393-404, http://www.newmediareader.com/book_samples/nmr-26-kay.pdf

21 Introduced in STAR TREK: THE ANIMATED SERIES (USA 1974, ●: Gene Roddenberry) and popularized in ENCOUNTER AT FARPOINT (USA 1987, D: Corey Allen), the pilot episode of the science-fiction TV-series STAR TREK: THE NEXT GENERATION (USA 1987-1994, P: Gene Roddenberry). Roddenberry's holodeck was an immersive holographic and interactive entertainment environment, the users of which physically stepped into interactive fiction and influenced their progression by playing. Within a short time, the concept of a holodeck became the model for the digital future of art and entertainment—not only for millions of Star Trek fans but also for academics, scientists, and artists, and especially for filmmakers and game designers. See G. S. Freyermuth: *Games | Game Design | Game Studies*, pp. 102-103.

22 Ascott, Roy: "Gesamtdatenwerk. Connectivity, Transformation and Transcendence (*1989)," in: Timothey Druckey (ed.), *Ars Electronica: Facing the Future*, Boston: MIT Press 1999; online: http://epc.buffalo.edu/584/docs/ascott.html, pp. 86-89, p. 89. See also: "We are a long way from the Gesamtdatenwerk. The computer industry is slow in releasing those technologies which will facilitate a seamless interface ..."

My first postulate, therefore, is: *The desire for transmedia and transmedia storytelling is centuries-old and stems first from the mechanical, and then industrial, separation of media.*

II. TECHNOLOGICAL ORIGIN OF TRANSMEDIA

Despite their differences, both mechanical and industrial media are tied to specific tools and materials. This diversity started to end with digitization.[23] In principle, transmedialization stems from the core innovation of digital technology: the adequate transfer of analog qualities and functions into numerical values, resulting in the separation of hard- and software as conceived for tools/programs by John von Neumann in 1945 and for materials/files by Claude Elwood Shannon in 1948.[24] Until then, the arts had found their aesthetic realization with different apparatuses in incompatible analog media—texts on paper (or celluloid/microfiche), sound on vinyl or magnetic tape, painting on canvas (or celluloid/microfiche), stills and moving photographic images on celluloid or magnetic tape. Now their content could be produced virtually and stored within the universal transmedium of software—at least, in principle. It should take decades to realize the theoretically conceived virtualization technologically.

This successive migration of production and reception into data space had profound consequences. For the first time, virtualization put different media on the same level:

"United within the common software environment, the languages of cinematography, animation, computer animation, special effects, graphic design, and typography have come to form a new metalanguage. A work produced in this new metalanguage can use all

23 The usage of digitalization vs. digitization is contested. In this paper, digitization denotes the technical process of digitizing and digitalization the broader adoption of digital practices in business and in culture in general.

24 See Neumann, John von: "First Draft of a Report on the EDVAC" (1945). http://www.virtualtravelog.net/wp/wp-content/media/2003-08-TheFirstDraft.pdf; Shannon, Claude Elwood: "A Mathematical Theory of Communication," in: *The Bell System Technical Journal* 27 (1948). Online reprinted with corrections from The Bell System Technical Journal http://cm.bell-labs.com/cm/ms/what/shannonday/paper.html

the techniques, or any subset of these techniques, that were previously unique to the different media."[25]

Thus, in the transition to a digital media culture, the principle of separation, which characterized the analog media cultures of the past, was replaced by its opposite, the principle of connection or fusion, i.e., transmediality. The separation of (audio-) visual media from the environment, i.e., hardware framing, gave way to a connection or fusion with the environment, through software framing, resulting in the potential not just to decorate but augment reality. The separation from the audience through distance and physical barriers gave way to an intimate connection or fusion with the user, i.e., hands-on interaction and even physical immersion.

Thus, my second postulate is: *Transmedia is the technological result of digitization. This new affordance of software—the option to merge different media or fuse media with the environment or media with its users—now calls for its aesthetic design.*

III. CULTURAL ORIGIN OF TRANSMEDIA

Every era constructs its own knowledge space, including unique narrative spaces. The civilizational status quo expresses itself, on the one hand, in the correct procedures for the collection, validation, sorting, passing on and teaching of information, and, on the other hand, in the ability to turn this knowledge and the experiences of the era into meaningful narratives. In pre-industrial modern times, both knowledge transfer and storytelling fluctuated between speech and writing, literacy and orality. In the process of industrialization, mass literacy and mass print successively replaced oral and mostly narrative instructions with abstracted textualizations that became more and more impersonal and non-narrative—even in the realm of literature. This process must be understood as an academization of a growing number of social areas that before relied on oral communication, on master-apprentice-relations, personal interaction between teachers and students; those in the know and those who needed or wanted to learn.

At least since the late 19th century— in the second and third phases of industrialization—this process of textualization was countered by numerous efforts to enhance the text-based tradition and transfer of knowledge by employing new

25 Manovich, Lev: *Software Takes Command*, Boston: MIT Press 2012, p. 110.

industrial media. Great educational hopes were attached to photography, telephone and sound recording, movies and microfiche, radio, television and video. In the end, none of these aspirations came true. The reasons were manifold in nature: cultural and social, but primarily technological and economical. The analog procedures of sound and image recording, distribution, and reception were too technically complicated and economically expensive. In the industrial era, the hope for a multimedialization of the storage and transfer of knowledge—i.e., efforts to replace the reading of textual descriptions through audiovisual or even multimedia experiences—remained a pipe dream.

Starting in the middle of the 20th century, the dissatisfaction with the industrial order of things could be seen in a new series of utopian designs aiming at a fundamental reorganization of knowledge and its transfer through innovative techniques and technologies. Two of these designs were especially influential: Vannevar Bush's conception of *Memex*, a hypothetical machine to amend the fixed indexing and static management of the cultural memory,[26] and Ted Nelson's concept of *hypertext*, a novel software linking-technique able to arbitrarily interconnect passages of text and any other media.[27] Nelson's and later Douglas Engelbart's programming efforts to realize the hyperlinking of huge knowledge bases[28] were a continuation of Bush's analog ideas of associative indexing by digital means and thus transmedial avant la lettre.

At the same time, in the 1960s and 1970s, a creeping destruction of the traditional structures and narratives that had organized knowledge in mechanical and industrial culture became evident, or at least their deconstruction, their

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26 Bush, Vannevar: "As We May Think," *The Atlantic Monthly*, Juli (1945), http://www.theatlantic.com/unbound/flashbks/computer/bushf.htm

27 Nelson supposedly coined the term in 1963. The first documented source is a short article describing a lecture Nelson gave in 1965 at Vassar College: Wedeles, Laurie: "Professor Nelson Talk Analyzes 'P.R.I.D.E.'," in: *Miscellany News (Vassar College)*, February 3, 1965, http://faculty.vassar.edu/mijoyce/MiscNews_Feb65.html. See also Nelson, Theodor H.: *Computer Lib / Dream Machines*, Chicago: Nelson: available from Hugo's Book Service 1974.

28 See Engelbart, D. C.: "Augmenting Human Intellect: A Conceptual Framework" (1962), http://sloan.stanford.edu/mousesite/EngelbartPapers/B5_F18_ConceptFrameworkInd.html and http://www.liquidinformation.org/ohs/62_paper_full.pdf. Without yet using the terms hypertext or hypermedia, Engelbart conceptualizes a hypermedia information retrieval system that in the following years should become the famous NLS, or "oN-Line System." See https://en.wikipedia.org/wiki/NLS_(computer_system)

continuous loss of authority and authenticity. Roland Barthes and Michel Foucault pronounced, in 1967 and 1969 respectively, the "death of the author," i.e., of the traditional subject of knowledge and its transfer.[29] Ten years later, Jean-Francois Lyotard proclaimed the end of the "grand narratives" themselves.[30] In the last two decades of the century, however, the progressive digitalization of communication and culture—the virtualization of knowledge discovery and knowledge transfer—created new hopes for a reconstruction of non-written procedures and practices, particularly for overcoming textuality in favor of transmediality and abstraction in favor of new forms of expression, including narration as well as play.

My third postulate, therefore, is that *the cultural concept of transmedia responds to a perceived lack of effective ways to discover and transfer knowledge: It promises to provide better (trans-) medial means for both.*

IV. FROM INTERMEDIALITY TO MULTIMEDIALITY TO TRANSMEDIALITY

Transmediality can be best understood in comparison to what preceded it. In the mechanical age, the separation of media created the need to establish some sort of intermedial relations. Since the Renaissance, two methods resulting in two forms of intermediality came to mediate between the arts: transfer and adaptation. Music, for example, could not be stored directly and was transferred as precisely as possible into the textual medium of notation (and back into the performance of music). In the same way, theater plays were stored in textual form and reenacted again and again. Adaptation, on the other hand, changed the content and form of a work of art in order to recreate it in a different medium. Paintings, for example, were turned into literary narrations or dramatically reenacted; works of literature were set to music, staged, or condensed into painted scenes. The structure of these intermedial relationships can be compared to international

29 Barthes, Roland: "The Death of the Author," in: *Aspen Magazine*, Fall-Winter, 1967, http://www.ubu.com/aspen/aspen5and6/threeEssays.html#barthes; Foucault, Michel: "What Is an Author?," in: James D. Faubion (ed.), *Aesthetics, Method, and Epistemology: Essential works of Foucault, 1954-1984*, New York: New Press, Distributed by W.W. Norton 1998, pp. 205-222.

30 Lyotard, Jean François: *The Postmodern Condition: A Report on Knowledge*, Minneapolis: University of Minnesota Press 1984.

relations between nation states: the existing exchange leaves the sovereignty and independence of each party untouched.

In addition to these intermedia relations of transfer and adaptation, the new media developed with industrial technology since the 19th century offered advanced possibilities to overcome, at least partially, the mechanical separation of media, mainly through integration and montage. Photography could reproduce and thus contain works of paintings or architecture. Film could document stage plays as well as sporting and political events. Television could broadcast movies and televise stage plays or any other local event live nationally, and soon thereafter, internationally. This integration of older mechanical media into the new industrial media and then of the older industrial media into newer industrial media was to a large extent due to methods of semi-automatic storage and montage of media. The broadest cultural impact took place, starting in the 1920s, through the combination of textual and visual discourses in the illustrated press and, starting in the early 1930s, through the montage and synchronization of picture and sound track in sound film and, since the 1950s, in television. The structure of these multimedia relationships can be compared to the relation of nation states in multinational organizations like the UN or NATO: The close cooperation and even interdependence in certain areas do not question the sovereignty or independence of each participating nation.

In contradistinction to these intermedial and multimedial relations, which leave the different analog media more or less intact, the process of virtualization merges them. In software, the material differences between analog media are replaced technologically by a common signal code, and aesthetically, as Lev Manovich states, by a common metalanguage. Thus, digital transmedia can rather be compared to transnational NGOs like Amnesty International or Greenpeace which operate beyond the intellectual horizon and political constraints of nation states. The progressive digital fusion of media occurring during the second half of the 20th century necessarily started to draw attention away from the differences and dissimilarities of individual media and toward their similarities and commonalities. Accordingly, over the last quarter century, the various established academic disciplines concerning themselves with fine arts, literature, music, theater, and film as well as the newer media and game studies came to the realization—bit by bit, so to say—that they were in need of transdisciplinary concepts helping them to overcome their strict and restricting subject boundaries.

My fourth postulate is *that the term transmediality refers to a radically new relationship between different media and their art forms and content: In addition to transfer and adaptation, which were already possible in pre-industrial media, and in addition to integration and montage, which became possible in industrial*

media, the digital transmedium software has the affordance to merge different media technologically as well as aesthetically.

V. MEDIA CONVERGENCE AND COMPLEMENTARITY

For quite some time, digitalization has been forecast to cause profound changes in the interrelations of old as well as new media. Already in 2003, Henry Jenkins observed that we were entering an "era of media convergence."[31] Regarding media technology, we can clearly observe that a convergence in the modes of production as well as in the habits of reception is indeed taking place. "[T]he media-specific distinctions between cinematic, televisual and computer media," Anne Friedberg stated, for example, "have been eroded beyond recognition by the digital technologies that have transformed them."[32] Just as clearly, however, we can see that neither the modes of expression in different media nor their modes of storytelling are assimilating. Technological convergence does not necessarily correspond with aesthetic convergence.

Quite to the contrary, transmedia productions rely on and benefit from the different aesthetic qualities of the media involved. Their storytelling seeks to exploit the specific affordances of, say, movies or games. Though there are obviously aesthetic qualities that both audiovisual media can share—stories and characters, elements of visual design, mise-en-scène, choreography—, the aesthetic experiences they are able to convey are radically different. While linear audiovisions tell of realized actions in fictitious worlds, games open up fictitious, rule-controlled stories and story worlds for potential action. Thus, movies cannot offer playful participation and interaction with their characters and plots, while games cannot deliver the carefully enacted narrative and emotional coherence of cinematic storytelling.

As a consequence, transmedia should not and cannot aim for aesthetic convergence. It must try to preserve the aesthetic autonomy of the different media contained or employed. The strength of transmedia productions lies not in dupli-

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31 Jenkins, Henry: "Transmedia Storytelling: Moving Characters From Books to Films to Video Games Can Make Them Stronger and More Compelling," *Technology Review*, January 15, 2003, http://www.technologyreview.com/news/401760/transmedia-storytelling/

32 Friedberg, Anne: *The Virtual Window: From Alberti to Microsoft*, Cambridge, Mass.: MIT Press 2006, p. 3.

cation and adaptation, but in supplementation and complementation. Different media add new aspects to any transmedia content, vertically as well as horizontally: extensions and sequels, background and prequels, expansions and excursions, digressions and consolidations, branching lines, enhancements, and even revisionist versions. On the one hand, in transmedia productions, all media works must exist for themselves. On the other hand, they must form a mosaic whole and ensure a unified experience—which, at the same time, must remain open for further additions as well as modification and personalization by users.

My fifth postulate: *Transmedia is characterized by the simultaneity of technological convergence and aesthetic complementarity.*

VI. TRANSMEDIA STORYTELLING

My last historical postulate concerns itself with the specific qualities of transmedia storytelling. In general, narratives respond to a basic human need for interpretation and meaning. That which is conveyed narratively we grasp and memorize more quickly and easily. Storytelling thereby serves the management and transfer of knowledge, norms, and values: how we behave and act. Narrative helps us understand the world by endowing it with rational and emotional meaning. Thereby it appears to follow some basic patterns, at least in Western culture: the custom of beginning, middle, and end;[33] the stages of the hero's journey, which begins with a challenge, forces its hero to make a choice and ends with a resolution of the conflict.[34] This fulfills the central wish that stories have conse-

33 Though not necessarily in that order, as Jean-Luc Godard once remarked.—The origin of this remark is hard to determine. However, the quote is widely attributed to Godard. See for example: N, N.: "Godard only knows... For decades, he was regarded as a genius and a revolutionary, but Jean-Luc Godard—70 years old next week—has spent the last 20 years alienating everyone. Has he finally succeeded in biting off the hand that feeds him?," *The Guardian*, November 25, 2000, https://www.theguardian.com/film/2000/nov/26/features.—In his biography of Primo Levi, Berel Lang quotes the following dialogue: "Interlocutor: But surely, M. Godard, you would agree that every film should have a beginning, a middle and an end. / M. Godard: Yes, of course—but not necessarily in that order." (Lang, Berel: *Primo Levi: The Matter of a Life*, New Haven: Yale University Press 2013; quoted as motto, before content page).

34 See Campbell, Joseph: *The Hero With a Thousand Faces*, 3rd ed, Novato, Calif.: New World Library 2008 (*1949).

quences, that at the story's end the world might be a different place than it was at the story's beginning.

Literary and audiovisual storytelling, however, differ fundamentally in their ability to manipulate space and time. While contemporary imagination alone sets the limits to oral and written storytelling, the theater and its major art form, the drama, were constrained by the curtain as their only means to change time and place. From the perspective of today's audiovisual media this seems to be rather limited, but for those of that time, the unity and sequentiality of the action effectively expressed the pre-industrial way of life—that "all the world's a stage"[35]; the rising bourgeoisie's new perception of space and time, its fight for economic, political, and cultural emancipation, its understanding of what it meant to be human, its conception of the world.

In the 20th century, first cinema and later television became defining media. Their fictional artifacts were not played out live anymore, but prerecorded in a Tayloristic manner, edited together, into a final assembly—the so-called final cut—and then distributed either in identical copies by physical transport or immaterially by broadcast. Specifically, the new ways in which movies, television plays and series manipulated space and time expressed the industrial way of life like no other media, the mentality of blue and white collar workers, their conception of what it means—or rather, meant—to be human.[36]

Now digital games and transmedia are assuming that role by enabling users to interactively explore, experience and co-create narratives in a non-linear or at least multi-linear fashion. In games especially the aesthetic effect is two-fold: a virtualization of space and time and a spatialization and temporalization of virtuality. It is in this new virtual space-time continuum that the unique aesthetic experience of multilinear storytelling emerges—through a fusion of the qualities of malleable story worlds and their inherent narrative potential with the many individual choices, reactions, and interactions of its users.

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35 "All the world's a stage, / And all the men and women merely players: / They have their exits and their entrances; / And one man in his time plays many parts …" (Shakespeare, William: *As You Like It*, ed. Shakespeare, William, First Folio, 1623, http://shakespeare.mit.edu/asyoulikeit/full.html)

36 Cf. Benjamin, Walter/Jennings, Michael William/Doherty, Brigid/Levin, Thomas Y./Jephcott, E. F. N.: *The Work of Art in the Age of Its Technological Reproducibility, and Other Writings on Media*, Cambridge, Mass.: Belknap Press of Harvard University Press 2008.

My sixth postulate, therefore, is: *Transmedia storytelling reflects the experiences of digital culture as genuinely as theater once did for mechanical culture and film and television did for industrial culture. Transmedia now is, as the older media once were, the basis for the social construction of reality and its aesthetic perception.*

VII. INTENSIVE AND EXTENSIVE TRANSMEDIALITY

Over the last quarter century, two variants of transmedia formed in artistic and professional practice. First, there is the design of fictional or non-fictional artifacts that contain many different media and thus—within their interior structure—transcend traditional media boundaries. The most popular form of such artifacts are games and, in particular, Massively Multiplayer Online Role Playing Games (MMORPGS). Already a decade ago, Jesse Schell wrote: "There is nothing that cannot be part of a game. You can put a painting, a radio broadcast, or a movie into a game, but you cannot put a game into these other things. ... At their technological limit, games will subsume all other media."[37] Obviously, these digital transmedia artifacts more closely resemble containers like magazines than they do closed works. In fact, they usually remain open for endless modifications by their designers as well as by their users. For this first variant of transmedia artifacts and processes I have proposed the term "intensive transmedia."[38]

Equally popular and important is a second variant of transmedia: the effort to tell the same story, or parts of it, distributed over several media. Henry Jenkins described this in 2007 as "a process where integral elements of a fiction get dispersed systematically across multiple delivery channels for the purpose of creating a unified and coordinated entertainment experience. Ideally, each medium makes its own unique contribution to the unfolding of the story."[39] In the same vein, Drew Davidson characterizes this practice as resulting in "integrated, interactive experiences that occur across multiple media, with

37 Schell, Jesse: *The Art of Game Design: A Book of Lenses*, Amsterdam nnd Boston: Elsevier/MorganKaufmann (Kindle Edition) 2008, loc. 1326-29.

38 See G. S. Freyermuth: *Games | Game Design | Game Studies: An Introduction*, p. 222.

39 Jenkins, Henry: "Transmedia Storytelling 101," *henryjenkins.org*, March 22, 2007, http://henryjenkins.org/2007/03/transmedia_storytelling_101.html

multiple authors and have multiple styles."[40] For this second variant of transmedia artifacts and processes I have proposed the term "extensive transmedia."[41]

My seventh postulate is that *the breaching, crossing and sublation of the traditional boundaries separating analog media resulted in two variants of transmedia: intensive transmediality, the merging of several media within one artifact containing one or many multi- or non-linear narratives; and extensive transmediality, the distribution of one or many multi- or non-linear narratives over several media artifacts.*

VIII. TRANSMEDIA AUTHORSHIP

It seems evident that both variants of transmedia storytelling, for qualitative as well as quantitative reasons, require more than one author. On the other hand, some unifying authority is needed to guarantee the coherence of transmedia stories or story worlds. Consequently, the professions of *story architects* or *transmedia producers* have emerged over the last couple of decades. This development questions once more the culturally still dominant idea of single authorship,

40 Davidson, Drew: *Cross-Media Communications: An Introduction to the Art of Creating Integrated Media Experiences*, 1.0th ed, Pittsburgh, PA: ETC Press (Kindle Edition) 2010, loc. 36. Davidson uses the term cross media, but he considers cross and transmedia to be synonyms. However, in 2010, the Producers Guild of America Board of Directors "approved the addition of Transmedia Producer to the Guild's Producers Code of Credits (PCOC)." (N, N.: "PGA Board of Directors Approves Addition of Transmedia Producer to Guild's Producers Code of Credits," *producersguild.org*, April 6, 2010, http://www.producersguild.org/news/39637/PGA-Board-of-Directors-Approves-Addition-of-Transmedia-Producer-to-Guilds-Producers-Code-of-Credits.htm) As a consequence, the term cross media fell out of fashion, first in the industry, then in academia as well.

41 G. S. Freyermuth: *Games | Game Design | Game Studies: An Introduction*, p. 222.—In principle, the practices of extensive transmediality and adaptation are similar. In analog media, adaptation was a successive process: First the original work was published; adaptations came later. Transmedia replaces this analog sequentiality—say, from novel to movie to videogame—with parallel production thus enabling a higher degree of aesthetic exchange, particularly of narrative and visual assets. In the reception, parallel offerings of the same story or story world in different media increase the potential for immersion.

and, more specifically, the concept of individual ownership of intellectual property.

As an aesthetic as well as a legal concept, individual authorship is a cultural construct whose origins date back to the Renaissance and the invention of the printing press. John Locke's theory of individual property[42] and Immanuel Kant's theory of individual creativity[43] laid the intellectual foundation. In reaction, the British Statute of Anne codified copyright (1710) and the legislation of the French Revolution established the author's right (Droit d'auteur, 1791). While the 19th century Romantics subsequently idolized individual creatorship, the concept was soon called into question by the industrialization of (mass) cultural production with its collaborative work-sharing processes. This is particularly true for the new industrial media of the early 20th century: film, radio, and television. Beyond the existing legal framework and against cultural values and prejudices, the practical reality of mass media institutionalized a new collective authorship.

Now, in the context of transmedia, a new form of authorship is emerging once again. Its central characteristic is not individual or collective but distributed creativity. This concerns, first and foremost, professional production. Not different from a theater, film, or TV production, transmedia storytelling demands the combination and integration of diverse talents. However, empowered by virtualization and digital networking, the individuals involved don't have to collaborate in traditional ways anymore, i.e., hierarchically organized and working at the same place or at the same time. Second, this new distributed creativity and authorship also concerns what used to be the process of reception. As is well known, software artifacts that are created in the digital transmedium remain open for arbitrary modification—by anyone including their readers, viewers, players, or, "the people formerly known as the audience."[44] Being "the ideal aesthetic

42 Locke, John: *Two Treatises of Government: in the former, the false principles, and foundation of Sir Robert Filmer, and his followers, are detected and overthrown. The latter is an essay concerning the true original, extent, and the end of civil government*, London: A. Churchill 1690.

43 Kant, Emanuel (sic!): "Of the Injustice of Reprinting Books," in: Emanuel Kant (sic!) (ed.), *Essays and Treatises on Moral, Political, and Various Philosophical Subjects*, London: William Richardson 1798, pp. 225-239, https://archive.org/details/injustice_kant_books. The text was first published in 1785 (in German).

44 Rosen, Jay: "The People Formerly Known as the Audience," in: *press think*, June 27, 2006, http://archive.pressthink.org/2006/06/27/ppl_frmr.html

form for an era of collective intelligence,"[45] as Henry Jenkins claims, transmedia storytelling prepares the way for a new "participatory culture."[46]

Over the last quarter century, very different forms of contributions to transmedia storytelling have evolved, ranging from a variety of interactive opportunities built into transmedia worlds to planned or unplanned co-authorship through new content generated by users—such us add-ons, mods, mashups, remixes, machinima, fan cuts, fan fiction —to so-called open development of story and game worlds. What these emerging forms of distributed authorship might end up looking like is not yet foreseeable. Even less can the cultural impact be fully assessed. However, contours of the new participatory story genre stemming from such distributed authorship are already evident, as Janet H. Murray writes:

"Some of its conventions are clear, based on the way people have wanted to connect with existing story worlds and multiplayer games: It will involve an internally consistent but puzzling fictional world, an authored but participatory plot, and an encyclopedically large cast built around a small number of iconic figures."[47]

My eighth postulate: *After mechanical culture spawned the concept of individual authorship and industrial culture created the practice of collective authorship, digital culture now allows for a historically new form of distributed authorship: the networked collaboration of individuals—professionals as well as amateurs—who, largely independent of one another and without restrictions in terms of space and time, are designing, writing, producing, amending, and updating transmedia projects—in principle indefinitely.*

IX. LUDIFICATION AND GAMIFICATION

My ninth postulate investigates the influence of digital games on transmedia storytelling. Industrialization forced playfulness, which was important in pre-industrial culture generally and work specifically, into the private sphere (with

45 H. Jenkins: "Transmedia Storytelling 101."

46 Jenkins, Henry: *Fans, Bloggers, and Gamers: Exploring Participatory Culture*, New York: New York University Press 2006.

47 Murray, Janet H.: "Transcending Transmedia Part 2," *inventingthemedium.com*, November 20, 2011, https://inventingthemedium.com/2011/11/20/transcending-transmedia-part-2/

some good reason, considering the violence and danger arising from industrial machines and processes). In the transition from industrial to digital culture, however, a variety of industrial practices and values were successively and successfully supplanted by playful ones.[48]

This long-lasting transformation began in the early 1960s and specifically in the context of teaching and learning. Allucquere Rosanne Stone, for example, describes the appropriation of expensive computer processing power for pleasure purposes—which happened when MIT students programmed SPACEWAR! in 1962, one of the first games that were played on computers—as a replacement of work-ethic with play-ethic.[49] With their deliberate 'waste' of resources, these students mocked the economic efficiency principle of collective organizations and displaced it with the luxurious pleasure principle of the individual. In the culture of the 1960s, the gradual breakdown of industrial work ethic revealed itself as a popularization of the playful: From Eric Berne's bestseller *Games People Play: The Psychology of Human Relationships* (1964)[50] to Joe South's hit song, which it inspired, *Games People Play* (1968), and Clark C. Abt's book *Serious Games* (1970)[51] to the *New Games* movement that Stewart Brand initiated in the atmosphere of San Francisco's hippie culture and that was popular in the 1970s and early 1980s.[52]

Since then, the rise of knowledge work followed the same path. In contrast to industrial work—which takes place in the material world—, digital knowledge work—which takes place in the virtual world—is characterized by acting independently in the creative and thoroughly exploratory, and thereby playful, manipulation of software programs and files and their virtual symbols.[53] From this

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48 For the relation of industrialism and playfulness see G. S. Freyermuth: *Games | Game Design | Game Studies*, pp. 229-231; Huizinga, Johan: *Homo Ludens: A Study of the Play Element in Culture*, Boston: Beacon Press (Kindle Edition) 1955 (*1938), chapter XII "The Play Element in Contemporary Civilization."

49 See Stone, Allucquere Rosanne.: *The War of Desire and Technology at the Close of the Mechanical Age*, Cambridge, Mass.: MIT Press 1995, p. 13f.

50 Berne, Eric: *Games People Play: The Psychology of Human Relationships*, New York: Grove Press 1964.

51 Abt, Clark C.: *Serious Games*, New York: Viking Press 1970.

52 Foundation, New Games/Fluegelman, Andrew: *The New Games Book*, Garden City, N.Y.: Dolphin Books 1976.

53 See for the term *Knowledge Worker*: Drucker, Peter F.: *Post-Capitalist Society*, New York NY: HarperBusiness 1993. And for the term *Symbolic Analyst*: Reich, Robert

perspective, it is hardly surprising that at the same rate that knowledge work—especially in the so-called 'creative industries'—is becoming the most important source of economic growth, so, too, are changes in cultural behavior toward aesthetic artifacts taking shape. The contradiction between work-ethic and play-ethic that industrial rationality assumed, and that existed in factories as well as in bureaucracies, is gradually dissipating. This shift has already heavily impacted the education and ideals of advanced Western regions and brought on a change in both knowledge production and knowledge transfer between individuals and generations. In sum, during the last half-century, Western culture enjoyed a slow process of post-industrial (re-)ludification.[54] It places digital games—and especially serious games, which convey knowledge and promote awareness—in playful contention with industrialism, its logic as well as its ethics.

A more recent indicator showing the infiltration of the playful into culture and work is the practice of so-called *gamification*, i.e., the application of digital game elements—feedback mechanisms, competition, and reward systems—in areas that have had little affinity for games, such as education, marketing, and motivation. Gabe Zicherman calls it "[...] the process of using game thinking & dynamics to engage audiences and solve problems."[55] In this respect, it seems useful to distinguish between gamification of the first and second order:

- *invasive gamification* (or ludification), which has been driven by a (to a large extent 'naturally' occurring) popularization of analog as well as digital games since the 1960s, as well as the intrusion of games and other playful practices into areas of culture previously reserved for other media and practices;
- *pervasive gamification*, which has for the past decade—deliberately and professionally—appropriated and exapted elements of digital games for fields and purposes outside the area of games.

B.: *The Work of Nations: Preparing Ourselves for 21st-century Capitalism*, New York: A.A. Knopf 1991.

54 See for example Frans Mäyrä's ongoing research project: "Ludification and the Emergence of Playful Culture (2014-2018)," https://ludificology.wordpress.com/2014/12/22/aims-of-the-research-project/

55 Zichermann, Gabe/Cunningham, Christopher: *Gamification by Design: Implementing Game Mechanics in Web and Mobile Apps*, Sebastopol, Calif.: O'Reilly Media 2011.

Therefore, my ninth postulate states that *transmedia is characterized by twofold gamification: First, in transmedia story worlds digital games can take on functions that until recently were reserved for other media; second, stories told in other media can apply elements of games to intensify engagement, involvement, and immersion.*

X. HYPERREALISM AND AUTHENTICITY

My tenth postulate investigates the qualities of digital visuality, particularly with regard to the authenticity of transmedia storytelling as well as transmedia knowledge transfer. After the proliferation of perspectival 2D realism following the Renaissance and then of 2D and 3D photorealism in the 19th and 20th century, a new variant of realistic image production is evolving with digitalization: Virtual image production combines the non-indexical quality of painterly realism with the indexical quality of camera-produced photorealism. Such imagery was anticipated in painting since the 1960s and was described by art criticism as 'hyperrealism' since the early 1970s.[56] The aesthetic result is a new, third form of realistic representation: 'photorealistic' imagery without, or rather beyond, photographic indexicality.

While analog photos and movies obviously must show what has actually happened somewhere at some time, hyperrealistic pictures and audio-visions—like realistic paintings—can show what their creators were able to imagine and to produce or program skillfully. More importantly for transmedial storytelling, hyperrealistic audiovisions (created in the mathematical transmedium of software) can be manipulated arbitrarily by their originators as well as by later users. This endless manipulability, however, leads to the loss of a medially established

56 In retrospect, the picturesque hyperrealism of the sixties and seventies proved to be, like large parts of analog special effects technology, an aesthetic anticipation of digital media technology and its effects. For picturesque hyperrealism see Chase, Linda: *Hyperrealism*, London: Academy Editions 1975.—For cinematic hyperrealism see Brinkemper, Peter V.: "Paradoxien der Enträumlichung. Zur Philosophie des 3-D-Films," in: *Glanz und Elend. Literatur und Zeitkritik* (2012), http://www.glanzundelend.de/Artikel/abc/s/starwars.htm.—For the historical and aesthetic differentiation of realism, photorealism, and hyperrealism see Freyermuth, Gundolf S.: "Cinema Revisited. Vor und nach dem Kino: Audiovisualität in der Neuzeit," in: Daniela Kloock (ed.), *Zukunft Kino*, Marburg: Schüren 2007, pp. 15-40.

authenticity as it used to result, in industrial photorealism, from the various basic procedures of imprinting light and sound waves directly onto analog media. In digital hyperrealism, authenticity is not a semi-automatic function of specific media affordances (as it was in pre-industrial media), but of the creative processes associated with authorship.

Thus, the tenth postulate is: Based on the virtualization of media, *transmedia per se and specifically transmedia storytelling can offer seemingly photorealistic experiences that have no foundation in material reality. They obtain their authenticity, i.e., believability and authority, solely and exclusively from the quality of their authorship, its believability, and authority.*

Currently, three different modes to produce non-indexical hyperrealistic audiovisuals co-exist which are all employed in transmedial storytelling: virtual creation in the tradition of analog animation, i.e., digital generation ex nihilo; hybrid creation in the tradition of analog feature film production, i.e., hyperrealistic modifications of previously captured live-action footage or blending of such footage with computer generated images, and procedural creation in the tradition of digital games, i.e., image generation through game engines in real-time depending on user interaction. Particularly the last variant allows for the creation of participatory hyperrealistic artifacts that can be entered and navigated in real time.

This ability to physically interact with digital data complements and advances the transformation that images undergo with their digitalization. Kevin Kelly was probably one of the first to recognize that screens and what they show—still and moving digital images—turn into "portals" once we can interact with them naturally.[57] Writing about his friends' young daughter—a child of the digital age—, Thomas Elsaesser put this shift in the view and perception of perspectival images in more concrete terms:

"... for her generation, pictures on a computer screen are not something to look at, but to *click* at: in the expectation of some action or movement taking place, of being taken to another place or to another picture space. The idea of a digital photo as a window to a

57 Kelly, Kevin: "Window on the World," in: N.N, '13 of the Brightest Tech Minds Sound Off on the Rise of the Tablet', in: *Wired*, August 29, 2010, http://www.wired.com/magazine/2010/03/ff_tablet_essays/all/1: "Don't think of them as tablets. Think of them as windows that you carry. [...] This portable portal will peer into anything visible. You'll be able to see into movies, pictures, rooms, Web pages, places, and books seamlessly."

view (to contemplate or be a witness to) had for her been replaced by the notion of an image as a passage or a portal, an interface or part of a sequential process—in short, as a cue for action."[58]

XI. SIMULATION AND WORLDBUILDING

Artifacts that virtualize processes and procedures of real or imagined worlds are called simulations. Their technological basis is the transmedium's ability to represent systems, the affordance of procedurality. Because of their medial characteristics, simulations do not simply—as is the case with literature—describe systems, or merely—as is the case with visual arts and photography, theater, film, television—represent them visually or audiovisually. Rather, digital games can simulate how systems function and thereby they enable players to experience these systems.

At the end of the 1990s, Janet H. Murray recognized this special quality of digital narrations: "The most important element the new medium adds to our repertoire of representational powers is its procedural nature, its ability to capture experience as systems of interrelated actions."[59] Ian Bogost later introduced procedurality into Game Studies as a term describing the medial affordance for the construction of dynamic models of real-world processes: "This ability to execute a series of rules fundamentally separates computers from other media."[60] Digital games use procedurality as their "core representational model."[61]

Virtual systems can simulate biological, social, cultural, and economic conditions, while simultaneously enabling interaction with these simulations. Through their playful interactions users tend to build mental models: "The com-

58 Elsaesser, Thomas: "Die 'Rückkehr' der 3D-Bilder. Zur Logik und Genealogie des Bildes im 21. Jahrhundert," in: Gundolf S. Freyermuth/Lisa Gotto (eds.), *Bildwerte: Visualität in der digitalen Medienkultur*, Bielefeld: transcript 2013, pp. 25-67, p. 54. (Quote taken from Thomas Elsaesser's English manuscript.)

59 Murray, Janet Horowitz: *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*, New York: Free Press 1997, p. 274.

60 Bogost, Ian: *Persuasive Games: The Expressive Power of Videogames*, Cambridge, Mass.: MIT Press 2007, loc. 125.—Bogost himself points out that Janet H. Murray, already in 1996, recognized procedurality as a central characteristic of the digital transmedium, from which its special storytelling capabilities result. See Ibid., loc. 119.

61 Ibid., loc. 36.

puter is just an incremental step," says Will Wright, "an intermediate model to the model in the player's head."[62] In general, simulations concern themselves—independent from any degree of realism—with simplified abstractions of real-world role models: "A simulation does not attempt to simulate every aspect of its referent, but instead focuses on those elements necessary to the game."[63] Different principles can underlie these abstractions, from the production of specific experiences to the teaching or training of specific skills:[64] "Ultimately, of course, we don't care about creating either stories or games—we care about creating experiences," Jesse Schell states: "Stories and games can each be thought of as machines to help create experiences."[65] Most transmedia simulations, however, aim for hyperrealism, i.e., they try to build audiovisual worlds which are not only functionally but also aesthetically consistent.

Such fictional worldbuilding is certainly not an entirely new practice in the history of the arts. Epic storytelling strove to capture dying worlds, as, for example, Honoré de Balzac undertook with the *Comédie Humaine*.[66] Others attempted to invent entirely new fictional worlds, like J. R. R. Tolkien with *The Lord of the Rings*.[67] Dramatic storytelling, however, bound to audiovisual representation in

62 Quoted after Fullerton, Tracy/Swain, Christopher/Hoffman, Steven/Books24x7 Inc.: *Game Design Workshop: Designing, Prototyping and Playtesting Games*, San Francisco, Calif.: CMP 2004, loc. 4092.

63 Salen, Katie/Zimmerman, Eric: *Rules of Play: Game Design Fundamentals*, Cambridge, Mass.: MIT Press (Kindle Edition) 2003, loc. 785.

64 Quoted after T. Fullerton et al.: *Game Design Workshop*, loc. 4092.

65 J. Schell: *The Art of Game Design*, loc. 5474. Also, McGonigal, Jane: *Reality Is Broken: Why Games Make Us Better and How They Can Change the World*, New York: Penguin Press (Kindle Edition) 2011, loc. 595. "A good game is a unique way of structuring experience and provoking positive emotion."

66 French writer Honoré de Balzac (1799-1850) conceived the idea of a panoramic portrait of society which came to be known as *La Comédie humaine* in 1832. It "consists of 91 finished works (stories, novels or analytical essays) and 46 unfinished works (some of which exist only as titles)." See https://en.wikipedia.org/wiki/La_Comédie_humaine#cite_note-1

67 British writer and professor of English language John Ronald Reuel Tolkien (1892-1973) wrote the epic saga *The Lord of the Rings* as a sequel to his children's book *The Hobbit* (1937) between 1937 and 1949. Published in three parts in 1954 and 1955, the saga created a whole fantasy world whose strong influence on popular culture and specifically games and transmedia productions is ongoing.

time and space, was largely barred from such worldbuilding—mostly for media-technological reasons: both the production requirements and the circumstances of reception in theater, cinema, and television. Only with the transition to virtual, i.e., software-based audiovisuality, did the construction and reception of entire audiovisual worlds move into the realm of possibility. Worldbuilding was pioneered in games but has become important in filmmaking as well. "Constructing worlds is the main idea," states WATCHMEN production designer Alex McDowell: "By creating a 3-D virtual production space, you can work with your fellow filmmakers in a very descriptive, data-rich, virtual representation of the film before you even start making it."[68] In a similar way James Cameron described AVATAR's hyperrealistic "movie-scape": "It's like a big, powerful game engine. If I want to fly through space, or change my perspective, I can. I can turn the whole scene into a living miniature."[69] Tom Chatfield thus considers the "aesthetics of world-building" as a central moment of digital culture.[70]

In contemporary transmedia, *story worlds* or *story universes* may not completely replace linear storylines, but they certainly start to compete with them. These three-dimensional action areas have to be designed rather than simply described. Henry Jenkins speaks of the "story architecture" of narrative transmedia worlds: Designers, who develop these forms of 'environmental storytelling,' work as "narrative architects [...] privileging spatial exploration over plot development."[71] This holds true for intensive as well as extensive forms of transmedia. Consequently, a defining trend in transmedia storytelling—whether extensive or intensive—has been, as Elizabeth Evans analyzed, a switch from succession to layering:

"Rather than building a single narrative flow from screen to screen, leading the viewer from a webisode prequel to the episode to a game in sequence, multiple micro flows are in place within individual episodes and across screens, from the television to the app and

68 Quoted from Hart, Hugh: "Virtual Sets Move Hollywood Closer to Holodeck," *Wired*, March 27, 2009, http://www.wired.com/underwire/2009/03/filmmakers-use/

69 Quoted from Chatfield, Tom: *Fun Inc.: Why Games are the Twenty-First Century's Most Serious Business*, London: Virgin (Kindle Edition) 2010, loc. 623-625.

70 Ibid., loc. 2188-92.

71 Jenkins, Henry: "Game Design as Narrative Architecture," in: Noah Wardrip-Fruin/Pat Harrigan (eds.), *First Person: New Media as Story, Performance, and Game*, Cambridge, Mass.: MIT Press 2004, pp. 119-129. Quoted from: http://web.mit.edu/21fms/People/henry3/games&narrative.html

back again, and through different components within the app. [...] The early transmedia storytelling strategies that led viewers through different narrative experiences, separated by a linear temporal structure as well as different devices have evolved into a layering of experiences onto a single narrative moment."[72]

My eleventh postulate: Based on the affordance to procedurally simulate systems functionally as well as aesthetically, *transmedia enables a new kind of spatial and layered storytelling. Its core element is the hyperrealistic construction of consistent 'worlds'—whether fictional or documentary—that can be navigated and experienced in real-time.*

XII. VANISHING POINT

In summary, the story of transmedia seems to go like this:

An age-old desire to overcome the mechanical and industrial separation of media (I) found its technological realization in the digital transmedium of software (II). It promises more efficient ways to express and transfer cultural knowledge (III) by progressing from intermedia exchange and multimedia integration to a full-fledged merging of media (IV). In its dialectical unit of technological convergence and aesthetic complementarity (V), transmedia has the aesthetic affordance to reflect and express the cultural experiences of digitalization, specifically new perceptions of time and space (VI). So far, two new variants of storytelling have emerged: intensive and extensive transmedia, the fusion of several media within one artifact and the distribution of narratives over several media (VII). Both variants require and establish (in the structurally open-ended creation of transmedia works) a new kind of distributed authorship involving many networked individuals, professionals, and users (VIII). Artistically, three signature features characterize transmedia storytelling: first, a twofold gamification, i.e., a reflection of the growing cultural importance of games and play as well as the specific application of game design principles in non-game-related areas (IX); second, hyperrealism, i.e., the use of non-indexical visuals and audio in fictional as well as non-fictional contexts whose authenticity depends on

72 Evans, Elizabeth: "Layering Engagement: The Temporal Dynamics of Transmedia Television," *Storyworlds: A Journal of Narrative Studies*, 2015, pp. 111-128, http://eprints.nottingham.ac.uk/30924/1/Evans%20-%20Layering%20Engagement%20(Storyworlds).pdf

authorial authority (X); third, simulative worldbuilding, i.e., the construction of consistent and navigable domains for spatial and layered narrative experiences (XI).

Which leads, in conclusion, to my twelfth and final postulate: *From these multiple perspectives, (at least) one vanishing point ascends in the distance where the discrete and diverse developments of transmedia converge: the playful multi-layered hyperrealistic simulative worlds of Virtual Reality.*

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Worlds Apart?

Game Worlds Versus Other Imaginary Worlds

MARK J. P. WOLF

The imaginary world tradition has a long history, and thousands of examples of different worlds. New media technologies introduced during and right before the 20th century gave us new windows through which to view imaginary worlds, and changed the nature of those worlds as well. One type of technology from the latter part of century that allowed new types of worlds to come about is that of video games. Since then, video games have provided some of the most popular worlds of the 21st century, including ones that players spend many hours visiting on a weekly or even daily basis.

At first glance, the main difference between video game worlds and the other kinds of imaginary worlds that came before them appears to be the *interactivity* that video game worlds have to offer. But there is an entire history of interactive imaginary worlds that appeared before the invention of video games; dollhouses, model train sets, military simulation games, board games, playsets, tabletop role-playing games, and so forth. Each of these presents an imaginary world which players interacted with, building and destroying, interacting with the avatars of other players, and producing narratives out of the ensuing encounters.

We might then suggest that video games introduced the notion of *rule-based interactivity* in imaginary worlds, but here, too, we would be wrong. Worlds with interactivity based on a set of formal rules date back to the *Kriegsspiel* simulation games used by the Prussian army in 1812. Board games that simulate miniature worlds likewise will often be played according to a set of rules, and

table-top games like DUNGEONS & DRAGONS[1] have elaborate sets of rules which describe the effects of weaponry, battles, creatures, and so on.

When we consider the automation of rule-based interactivity in imaginary worlds, we finally come to the main contribution of video games to the imaginary world tradition. Not only does the computer keep the world functioning by a rigid set of rules, allowing certain kinds of play and disallowing others, it also automates all the non-player characters, world events outside of the player's control, physics simulations, and visually and aurally depicts all game events, including those set in motion by the players. In the case of procedurally-generated content, games will even produce their game worlds algorithmically, creating game content that the game creators themselves have never seen. Probably the best example of this is NO MAN'S SKY,[2] with its quintillions of unexplored planets.

The presence of automated rule-based interactivity, however, also affects other aspects of the worlds in their design and how they are experienced, in particular, narrative, world structure, navigation, and the experience of the players or audience. Naturally, this is important not just to game designers, but to the authors of transmedial franchises, whose worlds are presented in a variety of different media. Worlds should remain consistent across media; otherwise a clash of realities will definitely result.

SETTING THE STAGE: GAME WORLDS AS SETTINGS FOR STORYTELLING

Whether or not the world of a video game is part of a larger, transmedial world, one of first questions one might ask is, how much backstory do players need to play a game? In both film and video games one finds the trope in which the protagonist begins as an amnesiac, and thus learns everything along with the audience, which means little or no exposition is needed up front and what exposition does come later is easily motivated. Other beginnings can have a similar effect, as in MYST[3] or OBDUCTION[4] where you arrive someplace without being told any-

1 DUNGEONS & DRAGONS (Tactical Studies Rules/ Wizards of the Coast 1974, ●: Gary Gygax/ Dave Arneson)

2 NO MAN'S SKY (Sony 2016, ●: Hello Games)

3 MYST (Broderbund 1993, ●: Cyan Worlds)

4 ●BDUCTION (Cyan World 2016, ●: Cyan World)

thing about it or what to do. Most of the time, however, the question of how much backstory is necessary depends on how important it is to set the player's decisions and actions within a certain context. Without backstory, the details of the world in which the story is set become the only clue as to the main character's purpose, thus even when not explicitly given to the player or audience, the backstory implicitly resides in the world around the main character, waiting to be discovered and pieced together. Either way, the world must be developed along with the story, regardless of the way that the plotting releases such information.

This is perhaps the first way that video games worlds differ from other imaginary worlds, from the point of view of the player; interactivity makes them more explorable, and shifts the burden of exposition onto the player, who must find information rather than be given it directly. Writers are told "Show, don't tell," and that is exactly what game worlds can do.

Figure 1: REMEMBER ME

In traditional media, scenes of past history can be as engaging as events of the present, since the audience experience them both in a similar way. In games, however, past events which have already happened are usually not interactive, unlike present events which are, so backstory material depicting past events will momentarily decrease interaction and disrupt the flow of the game more than they would a non-interactive experience. Thus, up-front exposition becomes more awkward to insert into a game, so the answer is to integrate it into the world of the story to be found by the player during the course of gameplay. Of course, some games do feature much opening exposition, in the form of cut-scenes, or explanations in a game manual, or other means; but this is to ignore

something that games can do better than non-interactive media; the presentation of exploration and navigation.

The player's ability to move about the world usually means that more of the world must be built to achieve a convincing illusion of completeness. While watching films, we only see what we are shown, but if we are shown enough we can speculate about what we do not see. In a video game, we can move around and try to enter buildings or at least peek into them; buildings in a city should have some interiors that the player can enter, otherwise the city will seem hollow and empty. Not every location needs an interior; just enough to give the feeling that the city is more detailed than we may have expected. If some buildings have interiors, players encountering locked doors in other buildings will be more likely to believe that they could be unlocked and entered. In the end, surprising the player with spaces that can be entered will make them more likely to speculate about locked buildings that have no interiors. Unlike a world depicted in books, movies, or television shows, which can be explored in a fairly linear fashion, a large and well-detailed video game world always seems to hold the promise that some aspect of it has still gone undiscovered and unseen. While there are many unexplored places in worlds appearing in books and films, they are ones that have not been described in detail or built as sets; the reader who has read the entire book and the viewer who has seen the entire film has read or seen all that the author has offered. But video game players can never quite be certain that they have seen every bit of the video game world that does exist in virtual form; thus the importance of things like Easter eggs in preventing, or at least delaying, the feeling that a given world has been exhausted and mastered.

The edges of the world should likewise be carefully designed. World boundaries should give some feeling of how the world extends beyond them, even though the player is kept from traveling across them; they should feel natural and be motivated by the design of the world. No one expects a video world to be endless, but an abrupt and unmotivated boundary can make a player all too aware of the game's limitations. It may also help if the boundaries of sight extend beyond the boundaries of movement, thus suggesting more of the world beyond what can be explored, as well as easing the world between existence and nonexistence.

Yet game worlds are more than just territories to navigate and map, and their size is not the only factor in their illusion of completeness. Two other factors play a large role in this area, those of game world detail and game world depth.

GAME WORLD DETAIL AND GAME WORLD DEPTH

Game world detail refers to the resolution of the world fabric, that is to say, the degree to which the details of the world are rendered for the audience to experience. Game world depth, on the other hand, is the degree to which game world details have meaning, and are interrelated and integrated into a world history, giving the game world its verisimilitude. Both are necessary for the world to be engaging and immersive.

Interactivity changes the nature of world detail, by allowing the player the freedom to explore and examine the world to some degree. In a non-interactive medium like film, world details are presented directly to the audience within the imagery of the film, where they may be foregrounded or backgrounded, but either way, they are present on-screen. Such was also the case in early video games when game worlds were simple and represented by two-dimensional graphics. With the development of off-screen spaces and three-dimensional graphics, however, game world detail increasingly ran the risk of going completely unseen by the player, either because a location is never visited by the player, or because the details are hidden from view and are missed by the player, or because different courses of events prevent the player from experiencing them. Sometimes, in the case of Easter eggs, these details are deliberately hidden from the player, and made more difficult to find.

Game world detail depends on the maximum resolution of the world fabric, and graphically, this can only be ascertained by moving close to an object so that it is displayed at maximum resolution on-screen. This is because objects using three-dimensional polygonal graphics will require the same number of polygons to be rendered regardless of how large the object appears on-screen. This is a problem, because objects will take as much time to render when they are far away as when they are in close-up. One solution to this problem is to only render objects within a certain distance, as in LARA CROFT TOMB RAIDER ANNIVERSARY,[5] but this severely limits the graphical realism of a game. Another solution to the problem is to have multiple models of the same object, each with a different degree of geometric resolution, so that models with higher resolution can be replaced by versions with lower resolutions as objects move farther away and appear smaller on-screen. However, such Level-Of-Detail or LOD algorithms, as they are known, have disadvantages, including the smoothing of the changeover

5 LARA CROFT TOMB RAIDER ANNIVERSARY (Eidos Interactive 2007, ●: Crystal Dynamics)

from one model to another at a different resolution, and most expensively, having to make every asset in multiple resolutions. Another technique, NURBS, which stands for Non-Uniform Rational Basis (or Bézier) Splines, represents objects as curved surfaces which can be rendered at various geometric resolutions depending on their on-screen size; objects are only resolved into a polygon mesh once a particular resolution is chosen, and can be re-rendered frame by frame for smoother transitions. Not all surfaces are made up of curves, however, and yet another method, that of Subdivision Surfaces used by Pixar's Renderman software, works in a similar way but accounts for corners and creases and avoids cracks and holes that can result from misaligned edges. But whatever method is used, there remains a limit to the amount of graphical detail supported by the game's world fabric, though this is in some ways similar to the limitations imposed on a person's sight without the addition of any optical instruments.

There is also the question of world detail uniqueness, which considers what details or objects are one-of-a-kind in the world as opposed to details or objects that are found in many repetitions. One example would be a brick wall in which the brick texture repeats across the expanse that it covers, as opposed to a real, randomized, or hand-crafted brick wall where nothing is repeated and the design of every brick is unique. The former's repetitions call attention to its artificiality while the latter contributes to a feel more akin to a real location. Objects that are found at multiple locations throughout a game world, like the searchable trashcans in BIOSHOCK INFINITE[6] are another example of reusable assets, but at least they are set far enough apart that their sameness does not feel quite as repetitive. Since physical objects in the real world are unique in their composition, cut-and-paste copies of objects in a computer-generated world will always seem artificial, as will repeating textures. The more an asset is reproduced in a game, the less meaning it will have; whereas unique objects will seem to have greater meaning and value because their one-of-a-kind nature implies that they were created with a singular purpose in mind.

The discussion of meaning brings us to game world depth, which is the degree to which game world details contain meaning, by being interrelated and integrated into the world's history and any stories taking place within it. While this kind of thing occurs in every kind of imaginary world, the player's experience and understanding of a video game world can be designed to rely more on this type of information, and can depend on how this information is offered and distributed. When enough world depth is present, every detail has both an origin

6 BIOSHOCK INFINITE (2K Games 2013, ●: Irrational Games/ 2K Australia)

and purpose; every detail should be, diegetically speaking, the result of a craftsman, natural growth, or some kind of events that led to its production, within the context of the game world and its history. Likewise, every detail should also serve a purpose diegetically, even if its main reason for being there originates non-diegetically, for example, objects that aid in wayfinding or defense. Even if the detail appears on objects the player cannot use, its presence still can be used to direct the player's attention to some aspect of the game world, increasing immersion.

Nearly all of the methods used to convey world data and information in other media can be used in video games, while interactivity provides new venues, such as the player's use of machines within the diegetic world, or other interactions with the various manifestations of the algorithms that determine the behaviors found in the world, including those of its inhabitants as well as other less animate objects or environments.

Figure 2: Interactive machinery encountered in MYST III EXILE

The kinds of data and information gleaned from the world in this fashion can be broadly categorized as being part of embedded narrative or embedded history.

EMBEDDED NARRATIVE AND EMBEDDED HISTORY

Embedded narrative can be defined as the backstory that the player must actively piece together from objects found throughout the game world, as opposed to the

explicit story material that is given directly, in cut-scenes, screens of text, or voice-overs that explain what is happening. Thus embedded narrative is something which is actively sought out by the player, and which can also be missed or overlooked as well. While this kind of narrative material is most commonly found in video games, one can find it in traditional non-interactive stories to a degree; for example, the collective set of clues scattered throughout a murder mystery that the reader or viewer may not notice or put together until the detective does so at the story's end. But embedded narratives are generally better suited to video games, where information can be hidden better due to the range of choices and options facing the player, and the interactivity needed for player-led exploration.

Embedded history, on the other hand, could be defined as referring to the way that the objects and environments of a game world suggest a past for that world. Of course the concepts of embedded narrative and embedded history usually overlap somewhat, and can be thought of as foreground and background, respectively; and like them, a matter of degree and not entirely distinct or exclusive of each other. Thus, the embedded narrative is something the player needs to piece together and learn, whereas the embedded history is not as crucial to the main narrative thrust, but is there to improve the feel of the world and to heighten its verisimilitude. Likewise, in traditional, non-interactive narratives, some information is necessary to understanding the story, while other world data does little more than provide a backdrop for the action; though naturally an overlap exists between the two, it is still a useful way of dividing up the data.

Another difference separating the two concepts is that of necessity. Designers need to embed all the elements necessary for the main narrative into the world, but beyond those, the details of a world may have relatively little or no meaning. Only those game projects which take the trouble to develop their worlds more fully beyond the requirements of the story will consciously choose to design every aspect of their world with a unifying history in mind, and a web of narrative fabric that explains how everything in that world came to be, and which relates all of its infrastructures together harmoniously instead of in hodgepodge fashion. This takes time and effort, which translates into money in the game industry, and some may not consider such added detail a worthwhile investment. But the game world depth that such an effort can generate makes the game world something which one can revisit multiple times, exploring the subtleties and details and appreciating the way they are developed in unison, and this can make a game world more realistic, more memorable, and even more beloved by its audience.

The design of a game world, then, should also demonstrate the various ways that history impacts an environment, and we can examine how these occur, both explicitly and implicitly.

EXPLICIT HISTORY AND IMPLICIT HISTORY

Game world items which we could group into the venues of explicit history would be everything that was diegetically created to convey information; in-world media such as billboards, signs, books, video clips, holograms, messages left by non-player-characters, and so on. Usually these are blatantly used for exposition, almost lazily at times, and made obvious enough that players are unlikely to miss them. Some games, like BIOSHOCK INFINITE, have narratives that are fairly good at incorporating such materials into their game worlds, as well as other details necessary to gameplay. For example, in BIOSHOCK INFINITE, once the Vox Populi have begun attacks on Columbia, it makes sense that we will occasionally find weapons and ammunition lying around inside the ruined building interiors. Yet, there still is no explanation as to why eating cotton candy found in a trash can increase one's health.

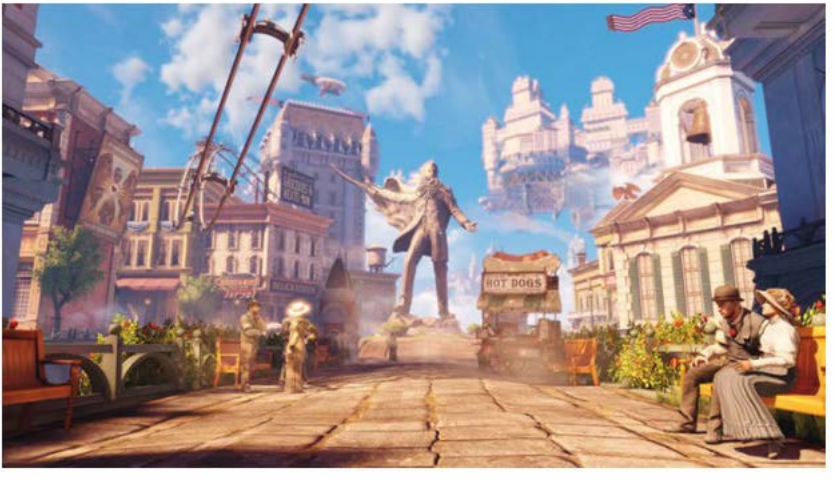

Figure 3: Bioshock Infinite

Explicit history is easy to design, but often harder to motivate than in other imaginary worlds, where an author can pause the narrative flow with an explanation of a location's history, or work it into characters' conversations. Such things can occur during cut-scenes in video games, but these tend to slow down the

action and momentarily reduce or halt interactivity, and if a player misses something, they often cannot be easily replayed again without losing a game's progress. On the other hand, items bearing a world's history explicitly can be reexamined or cast aside and ignored at the player's will, making them seem less intrusive than a cut-scene. Still, their presence, even when motivated, usually involves less effort than the discovery required for objects bearing implicit history.

Game world items bearing the implicit history of a game's world can be almost anything found within a game world. The very design of these items can indicate something about the history of the world, though the implications may be less obvious and take more time to notice, and not all games take the time to thoroughly design every detail. Design can be seen as the set of solutions that a culture uses to solve a problem or produce a particular kind of useful artifact. To take an example from real-world cultures, consider the designs of shoes. While the basic idea behind them is similar, shoe designs vary greatly across cultures, regarding the materials from which shoes are made, the shape and form of the shoes, how they are attached to the foot and worn, the degree to which they are practical or ornamental, the way that they indicate the status of the wearer, and other functions and meanings that they may have. All aspects of culture, architecture, clothing, food, tools, landscaping, and so forth indicate solutions to problems and a world-view, all of which can be indicated by objects and places that the player finds.

Character information can also be encoded implicitly. One real-world example of this, which could be simulated in a video game, is the estate sale. At an estate sale, which usually occurs when a homeowner dies and his or her house and its contents are put up for sale, one finds that all the everyday items present collectively infer a picture of their absent former owner; one gets a sense of the person's tastes, fashions, pets, economic class, religious affiliation, family relationships, hobbies, travels and vacations, and even personality, through the style of their furniture; books, music, and other media that they owned; cookware, tools, and gadgets that they used; and the style of décor of the house in general. Thus, even though the person is not present, within a few minutes one gets a sense of what the person was like through the house and its contents. To lesser degree, something similar to this happens in games like MYST, RIVEN,[7] RESIDENT EVIL ZERO,[8] GONE HOME,[9] BIOSHOCK INFINITE, and LIFE IS STRANGE,[10] in

7 RIVEN (Red Orb Entertainment 1997, ●: Cyan Worlds)

8 RESIDENT EVIL ZERO (Capcom 2002, ●: Capcom)

which we can explore characters' bedrooms and other personal spaces like desks, the contents of which reveal sides of the person that we would not otherwise know. In RIVEN, for example, Gehn is generally considered the villain of the story, but his bedroom contains a musical instrument, and pictures of his deceased wife and father, revealing softer side of the man than the encounters that one has with him otherwise.

The state of objects also can indicate their implicit history. Bullet holes reveal a past shootout, and scratches on a wall or doorway can indicate troubled former residents. Architectural ruins indicate that something was built and was later destroyed, and other more subtle things like the growth of trees can indicate how long a certain state of affairs has been the case. Ruins overgrown with vines may appear older than those with no growths, and even the way exposed stones have been worn and weathered away may also indicate signs of their age and how long ago the ruination occurred. While normally the wear and tear on objects that cause imperfections is looked down upon, some cultures place a value on such information, and the Japanese even have a term for it: *wabi sabi*.

SIMULATING *WABI SABI* (侘寂)

Japanese culture sees wabi sabi as the history of an object's use, and divides the resulting imperfections into two categories: wabi refers to the quirks or anomalies arising from construction, that give uniqueness to an object, while sabi refers to the beauty that comes with age, patina, the wear-and-tear on an object; thus a piece of furniture with nicks and scratches might be referred to as "acquiring sabi". Some descriptions of the role of wabi sabi are given in books by Andrew Juniper and Richard R. Powell:

"If an object or expression can bring about, within us, a sense of serene melancholy and a spiritual longing, then that object could be said to be wabi sabi."[11]

"Wabi sabi is an intuitive appreciation of transient beauty in the physical world that reflects the irreversible flow of life in the spiritual world. It is an understated beauty that

9 GONE HOME (The Fullbright Company 2013, ●: The Fullbright Company)

10 LIFE IS STRANGE (Square Enix 2015, ●: Dontnod Entertainment)

11 Juniper, Andrew: Wabi Sabi: *The Japanese Art of Impermanence*, Clarendon: Tuttle Publishing 2003, p. 11.

exists in the modest, rustic, imperfect, or even decayed, an aesthetic sensibility that finds a melancholic beauty in the impermanence of all things."[12]

"Wabi-sabi is a way of life that appreciates and accepts complexity while at the same time values simplicity. It nurtures all that is authentic by acknowledging three simple realities: nothing lasts, nothing is finished, and nothing is perfect."[13]

Thus, the wear-and-tear, aging, decay, and other imperfections of objects are more than just the embedded history of the object's existence, but something that makes that object unique, while at the same time calling attention to its limitations and impermanence, and even establishing a mood through its presence.

In film, an aesthetics of decay and grittiness can itself be traced back to movements like Italian Neorealism, and STAR WARS[14] is often cited as one of the first movies to present an imaginary world with a lived-in look, where things appeared aged and not everything was all shiny and new. Video games would not be able to follow suit for some time, until graphics had developed enough to show the kind of fine detail that wear-and-tear requires. Although Edwin Catmull would develop the process of texture mapping in 1974, it would not be until the 1990s that video games would be able to use it, and then only in games with pre-rendered imagery, like THE 7TH GUEST,[15] MYST, DOOM,[16] and RIVEN. As games began using more complicated three-dimensional environments, texture-mapping and lighting brought the lived-in look to video game worlds and new possibilities for storytelling using embedded history. Today's graphics are advanced enough that even subtle uses of *wabi sabi* within the design of world objects has become possible, opening up another realm of possibility for game world design.

The appearance of *wabi sabi* is especially common in the genre of post-apocalyptic games, wherein almost everything is in ruin and decay. For example, in THE LAST OF US,[17] we find a range of locations laid to waste and ruin, with dirt, decay, rust, and wear, and many places flooded or overrun with vines as nature reclaims the areas.

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12 A. Juniper: Wabi Sabi: The Japanese Art of Impermanence, p. 51.

13 Powell, Richard R.: Wabi *Sabi Simple: Create Beauty. Value Imperfection. Live Deeply*, Blue Ash: Adams Media 2005, p. 6.

14 STAR WARS (USA 1977, R: George Lucas)

15 THE 7TH GUEST (Virgin Interactive 1993, ●: Trilobyte)

16 DOOM (GT Interactive 1993, ●: id Software)

17 LAST OF US (Sony Computer Entertainment 2013, ●: Naughty Dog)

Figure 4: The Last of Us

Arguably, it is the inclusion of wabi sabi that gives these images of destruction their beauty, and gives the graphics of the game their charm and even their realism. But instead of merely finding objects with embedded history in them, could such history be added to objects during the events of the game?

WABI SABI, GAME WORLD HISTORY, AND PROCEDURAL GENERATION

Three-dimensional game worlds have grown quite large and are expected to be large in big-budget games. This means either an enormous amount of handcrafted objects and environments, as in GRAND THEFT AUTO V,[18] or the use of procedural-generation techniques as in NO MAN'S SKY. Although procedurally-generated worlds can produce a wealth of detail far beyond the player's ability to see it all, this kind of detail is unlikely to have the kind of world depth that is infused with meaning. Procedural generation techniques will need to be developed to a much greater degree before they can produce game world elements which have their own embedded histories within them, yet such generation does seem possible. Perhaps the closest thing to this that exists at present are the character histories generated in Tarn and Zach Adams's DWARF FORTRESS,[19] a game

18 GRAND THEFT AUTO V (Rockstar Games 2013, ●: Rockstar North)

19 DWARF FORTRESS (Bay 12 Games 2002-, ●: Bay 12 Games)

begun in 2002 which continues to be developed and expanded, and Mark Johnson's ULTIMA RATIO REGUM,[20] another work-in-progress begun in 2011.

Not only does DWARF FORTRESS procedurally generate the lands of game world, it also generates thousands of characters, civilizations, historical events, and so forth, so that every character has a history of places they have been; other characters they have met, or battled, or killed; what things they own; where they live; and so forth, giving each character a detailed backstory before the game begins, which adds some historical depth to the gameplay. Dwarf Fortress is able to do this because its graphics are very simple; mainly just ASCII characters in different colors. But supposing we applied the generation of a historical past to a game with three-dimensional graphics, appropriately sizing and aging the non-player-characters to match their histories, and even applying those histories to the objects they own. Thus, a sword and shield used in a number of battles would show the dents, nicks, and other damage that it has taken over the years; iron objects left outdoors would have the appropriate amount of rust, and so on. Not only could this history be applied at the beginning of the game, but it could be added to world objects and locations as the game continues.

Wear-and-tear is already simulated in industrial testing done virtually, where stress points and breakage is done on virtual products rather than on physical ones, and is accepted as being experimentally equivalent. Wear-and tear on the environment already exists to a slight degree in video games; in some shooting games, bullet hole damage appears on the walls and other objects and remains there when the player returns to it. Naturally, the application of *wabi* and *sabi* to objects and locations would add an increasingly great amount of data to be stored and rendered, but as processor speeds continue to advance, this will become possible to greater and greater degrees.

Imagine a game with state-of-the-art photorealistic graphics combining the vastness of NO MAN'S SKY with the generated historical depth of DWARF FORTRESS and with a meaningful narrative embedded into the game's world, through the implicit and explicit history of the world, along with human-guided procedural narrative parameters that generate interesting and engaging events and difficult dilemmas for the player to experience. Not only that, but the world could be seeded to produce new experiences, not just new stories, but even new worlds, with each player experience; Mark Johnson's game ULTIMA RATIO REGUM, with a planned release in 2020, is attempting to procedurally generate entire cultures and what is described as "Massive Environmental Storytelling" in

20 ULTIMA RATIO REGUM (Mark Johnson in development, ●: Mark Johnson)

which clues that reveal a conspiracy are hidden across the cultures of the game's world.

Finally, to go a step farther, all of these procedural frameworks for generating world data at various scales could be incorporated into their own standardized game engines, such that game designers would only have to introduce new seeds and preferences to create entirely new game worlds and player experiences.

THE OVERALL GAME WORLD EXPERIENCE

Everything discussed thus far, interactivity, embedded narrative, world structure, and navigation; all result in the player's overall experience of a game world, and are ways in which game worlds can differ the most from the worlds found in non-interactive media. Not only does the game world allow direct participation, it also allows for the creation of backstory and open-ended narrative in ways that other media do not. Video games and associated software can also function as world-building tools, actively incorporating world-building into the player's experience, such that world-building could potentially become a part of the game as well, beyond even what it is in MINECRAFT.[21] Now that computer graphics have become the main tool for visualizing and building imaginary worlds, video games and cinema converge ever closer as venues for worlds, and with virtual reality once again rearing its head-mounted display, it remains to be seen just how much more intimate our visits to imaginary worlds will become.

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NO MAN'S SKY (Sony 2016, O: Hello Games)
REMEMBER ME (Capcom 2013, O: Dontnod entertainment)
RED DEAD REDEMPTION (Rockstar Games 2010, O: Rockstar San Diego)

Playing (with) STAR WARS

JAMES NEWMAN

A LONG TIME AGO...

This chapter is concerned with STAR WARS videogames. Of course, it is not possible to discuss every STAR WARS videogame as, since Lucasfilm's 1977 film, there have been countless interactive interpretations. The diversity of these various games is considerable and includes Atari's 1983 arcade game with its iconic but spartan vector graphics and synthesised speech seeking to audiovisually replicate scenes from the original film including the infamous Death Star *trench run*, the side-scrolling, *run-and-gun* SUPER STAR WARS series for the Super Nintendo Entertainment System;[1] the role-playing of STAR WARS: KNIGHTS OF THE OLD REPUBLIC and massively multiplayer online role-playing of STAR WARS: THE OLD REPUBLIC;[2] through to the more recent STAR WARS BATTLEFRONT and DISNEY INFINITY 3.0 which bring a gritty realism and an altogether more cartoon-like aesthetic respectively.[3]

From even this brief overview of selected moments in STAR WARS' history as a videogame, some points are notable. While each of these titles is located within the literal and conceptual *universe* of Lucas' cinematic texts, the games do not slavishly recreate the entirety of the story arcs but instead excerpt, com-

1 SUPER STAR WARS (JVC/LucasArts/Nintendo 1992, ●: Sculptured Software/LucasArts)

2 STAR WARS: KNIGHTS OF THE OLD REPUBLIC (LucasArts 2003, ●: BioWare); STAR WARS: THE OLD REPUBLIC (LucasArts 2011, ●: BioWare)

3 STAR WARS BATILEFRONT (EA DICE 2015, ●: EA Digital Illusions CE); DISNEY INFINITY 3.0 (Disney Interactive Studios 2015, ●: Avalanche Software)

press and play with the narratives in interesting ways. Most obviously, there is a distillation of the movie into a small number of key action sequences around which the games are constructed.

The 1983 Atari arcade game's focus on the attack on the X-Wing squadrons' Death Star is a case in point while Sega's more recent STAR WARS: RACER ARCADE forgoes any discussion of EPISODE I: THE PHANTOM MENACE'S trade negotiations or the diplomatic machinations of the Senate and centres wholly on brake-neck pod racing.[4] With the focus on specific scenes/scenarios in these games, comes an inevitable elongation that belies the relative brevity of their appearance in the films. The hand-to-hand lightsaber battles that account for but a few minutes of silver screen time are reconfigured as the entirety of MASTERS OF TERÄS KÄSI,[5] for instance. Similarly, JVC's SNES SUPER STAR WARS games extend the film's physical spaces by requiring the player to traverse a complex Sandcrawler and battle through swarms of marauding Jawas, for instance. As well as extending focused moments of cinematic time and space, what we see in both of these examples is the adaptation of STAR WARS into game form. The distillation of lightsaber battles in TERÄS KÄSI reflects the contemporary popularity of 3D one-on-one combat games (such as VIRTUA FIGHTER and TEKKEN)[6] just as the *run-and-gun* focus of SUPER STAR WARS reflects the dominance of platform games such as SONIC THE HEDGEHOG and DONKEY KONG COUNTRY before.[7]

Here then, we note the dominance of the STAR WARS films as the canonical source material for adaptation into interactive form (not only are scenes, characters, vehicles and locales incorporated) but music, sound effects and even lines of dialogue are synthesized and later directly sampled and reproduced in the games. Additionally, the influence of currently popular (and technologically-enabled) game genres manifestly influence the form of those adaptations and it is no surprise to find the most recent releases at the time of writing falling into the extraordinarily popular First-Person Shooter category. Through these means, these games effectively communicate the unidirectional flow of content and re-

4 STAR WARS: RACER ARCADE (LucasArts 2000, ●: Sega-AM5); STAR WARS: EPISODE I: THE PHANTOM MENACE'S (LucasArts 1999, ●: Big Ape Productions)

5 MASTERS OF TERÄS KÄSI (LucasArts 1997, ●: LucasArts)

6 VIRTUA FIGHTER (Sega 1993, ●: Sega); TEKKEN (Namco Bandai 1994, ●: Namco)

7 SONIC THE HEDGEHOG (Sega 1992, ●: Sonic Team); DONKEY KONG COUNTRY (Nintendo 1994, ●: Rareware)

tain the canonicity of the cinematic realisations of the STAR WARS universe. However, not all STAR WARS videogames function in this manner.

OUT OF THE SHADOWS

The release of SHADOWS OF THE EMPIRE marks a significant turning point not only in the history of STAR WARS videogames but in the history of STAR WARS more broadly.[8] In part, this is because it was the first concerted STAR WARS transmedia project and partly because,[9] unlike many tie-in projects (such as the numerous *Expanded Universe* novels) which were typically set in distant times and spaces set apart from the canonical movie narratives and worlds, SHADOWS was located directly between THE EMPIRE STRIKES BACK[10] and RETURN OF THE JEDI.[11]

As Mark Cotta Vaz describes in the behind-the-scenes book that accompanied the SHADOWS project,

"In 1995, these creative explorations took a bold new direction with the development of the original storyline, Shadows of the Empire. Unlike previous tales, which had been set in the past or future relative to the trilogy (or, if set in the time period of the movies, were kept wholly apart from the events of the films), Shadows would be seamlessly woven into the fabric of the original trilogy, picking up the threads left dangling at the end of The Empire Strikes Back."[12]

Although the word *transmedia* is mentioned nowhere in the accompanying marketing and promotional materials, SHADOWS is an unequivocally transmedia project. It spread across comic books, trading cards, a novel and, interestingly led with a videogame. Indeed, this was actually a launch title for the new Nintendo 64 console in Europe. As Cotta Vaz explains:

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8 STAR WARS: SHADOWS OF THE EMPIRE (Nintendo/LucasArts 1996)

9 Jenkins, Henry.: "Transmedia Storytelling 101," *Confessions of an Aca-Fan*, 2007. http://www.henryjenkins.org/2007/03/transmedia_storytelling_101.html

10 THE EMPIRE STRIKES BACK (USA 1980, D: Irvin Kershner)

11 RETURN OF THE JEDI (USA 1983, D: Richard Marquand)

12 Cotta Vaz, Mark: *The Secrets of Star Wars: Shadows of the Empire*, London: Boxtree 1996, p. 6.

"In another unique move, Lucasfilm decided not only to explore Shadows through all the traditional licensing venues that today accompany blockbuster movie releases but also to extend the original story through various media simultaneously, including a Bantam Books novel, a six-part Dark Horse Comics series, a real-time 3-D interactive game produced by Lucas' own LucasArts division (which would be one of the first games produced for the breakthrough Nintendo 64 game system), a Topps card set, and even a recording produced by soundtrack specialists Varese Sarabande Records."[13]

The scope of the project is certainly impressive leading Cotta Vaz to report that, "As numerous creative participants voiced as one: Shadows of the Empire is a like a movie project without the movie."[14] Aligned, branded and networked, these kinds of convergence make the flow of content across multiple media inevitable.

"A Mos Eisley storyboard sequence, prepared by Industrial Light & Magic for the expanded version of the original Star Wars (set for release on the films' twentieth anniversary), also provided a valuable reference for computer gamers and comic creators."[15]

However, the collaborations across and between the different areas of production are demonstrably more dynamic and multidirectional than the simple sharing of reference material and the ensuring of continuity.

The creation of new material for SHADOWS raises questions about the STAR WARS canon that I do not have time to explore today (and the debates still rage within the fan community and are fuelled by even the most current media releases). To give a sense of the issues, SHADOWS introduces several new characters, most notably Dash Rendar who pilots a new ship, the Outrider. While these properties could have been rendered *legend* as so much of the Expanded Universe was upon Disney's purchase of STAR WARS, the Outrider (and latterly Dash) travel a different path because of SHADOWS' position in relation to the canon. As well as SHADOWS being woven into the narrative between THE EMPIRE STRIKES BACK and RETURN OF THE JEDI, elements of it are (retrospectively) added to the original A NEW HOPE[16] film through the Special Edition re-edits. With the Outrider now blasting out of Mos Eisley space port (and references to Dash

13 Ibid., pp. 6-8.

14 Ibid., p. 8.

15 Ibid., p. 6.

16 A NEW HOPE (USA 1977, D: George Lucas)

in Disney's own INFINITY 3.0 games), the status of at least these creations from SHADOWS are irrevocably altered.

THE GAME OF THE FILM

However, important though SHADOWS is in the formal history of STAR WARS' transmediality, the focus of this article centres on LEGO STAR WARS. The reason for investigating this more recent and altogether more playful series that, despite its apparently childlike presentation, I argue that it ranks among the most sophisticated and complex transmedial storytelling systems. In particular, I want to consider how the LEGO STAR WARS videogames connect with physical (LEGO) STAR WARS toys in enabling us to play STAR WARS. More than this, however, I wish to consider how the LEGO videogames afford the opportunity to play with STAR WARS.

This distinction between playing and playing *with* is something I explored in relation to videogames in my 2008 book *Playing with Videogames* where I talked about the ways in which creative and sometimes self-consciously resistant acts of play and *superplay* reconfigure games in meaningful ways very often unimagined by designers and developers.[17] This conceptualisation makes us sensitive to the ways in which players encounter the game as a suite of malleable materials that can be made and remade in the playing. As such, we recognise the potential distinction between the game-as-designed and the game-as-played and conceive of gameplay as a creative act that is both transformative and socially-situated, shared and collaboratively-authored. I have explored this elsewhere through the study of PAC-MAN[18] strategy guides that reveal not only different ways of playing but also how the tactics and practices developed by constituencies of players and fans fundamentally point to different constructions of the game and its playable possibility.[19]

What is especially interesting about the LEGO STAR WARS videogames is how they actively draw from the participatory cultures of fandom that that surround and sustain STAR WARS and incorporate the materials, readings and prac-

17 Newman, James: *Playing with Videogames*, London: Routledge 2008.

18 PAC-MAN (Namco 1980, ●: Toru Iwatani)

19 Newman, James: "Mazes, Monsters and Multicursality. Mastering Pac-Man 1980-2016," *Cogent Arts & Humanities* 3 (2016), http://dx.doi.org/10.1080/23311983.2016.1190439

tices of fandom into their fabric. In some senses, notwithstanding questions of canonicity, LEGO STAR WARS videogames help tell the story of the shifting *ownership* of STAR WARS and the increasing difficulty of defining and delimiting it as a series of *officially sanctioned* texts. It follows that LEGO STAR WARS is, I suggest, a game as much about STAR WARS fandom as it is a game of the STAR WARS film(s).

We should remember also that the LEGO STAR WARS videogames play a crucial role as gateways to the STAR WARS universe. In addition to noting these shifting entry points and the increasingly significant role that videogames play as points of access, we must recognise that this is a double-edged sword. Some of things these games do, and more importantly, some of the contexts they create and activities they allow players to partake in, create interesting challenges for players versed in LEGO STAR WARS who subsequently come to the films. Quite simply, with the films lacking many of the playful qualities and not manifesting the same sense of humour with which the games are suffused, they might be considered misleading. It is notable that a series of LEGO STAR WARS movies have now followed on from the success of the games perhaps smoothing this transition or even creating a new, branching path through the STAR WARS universe.

This chapter concludes by considering some of the latest LEGO STAR WARS videogames, to posit the idea that, ultimately, it is transmediality itself that becomes the object of their attention and the material for play.

PLAYING (WITH) STAR WARS: TRANSMEDIALITY, STORYTELLING AND PLAY

Although from its outset, STAR WARS was an archetype of what Meikle and Young call "the coming together of things that were previously separate,"[20] it is perhaps surprising to note that videogames were not part of that initial mix. However, STAR WARS was playable long before it took any kind of videogame form. That early playability was found largely—though not exclusively—in toys and, in particular, in the action figures, ships and playsets produced by Kenner. In fact, it is worth noting that, while they went on to be extremely pervasive and lucrative, the Kenner figures were not immediately available indicating both the

20 Meikle, Graham/Young, Sherman: *Media Convergence: Networked Digital Media in Everyday Life*, Basingstoke, Hampshire: Palgrave Macmillan 2012.

unexpected levels of demand from consumers and the comparative lack of the kind of unified and co-ordinated world building that Jenkins identifies in Convergence Culture.[21]

Regardless of their genesis, given their eventual prevalence we might be tempted to read the figures (and vast array of other products that have accompanied the films since the 1970s) as unwelcome examples of the encroachment of merchandising into children's media, perhaps even to the detriment of storytelling. And, while there were just 12 figures in the initial Kenner line-up, new waves of releases added many more to collect and consume—each with differing degrees of rarity and value to boot. Certainly, a reading that foregrounds the commercial imperatives driving the production of these figures is easy to make. However, this is far from the only reading available and it is useful to consider the kinds of play that these toys support and implicitly encourage.

Most obviously, and perhaps unsurpringly, the toys guide, frame and structure play around distinctive and memorable moments from the film's narratives. This is especially evident if we look at them in combination with the playsets and spaceships that accompanied them in the marketplace. The images on the box of the Millennium Falcon playset, for instance, showcase the toy's various features by recreating key scenes from the film with the figures acting out lightsaber practice, playing space chess etc. thereby connecting the play potential of the toy back to specific moments in the film and making those sequences literally *RE-playable*. Looking further at the design of the figures and playsets reveals some innocuous but essential features. In combination with the protruding tabs on the bases of the playsets and spaceships, the holes on the figures' feet literally locate characters in key places or moments. In this way, the toys are not just mapped back to the filmic narratives but are actually locked into positions that recreate and play out those key moments and scenes. Viewed in this way, these can be read as *toys of the film* which allow for, and even guide the player towards, the re-enactment of battles, set pieces and pivotal moments from the films. In this way, the toys act in a secondary or paratextual manner serving to canonise and lend authenticity to the *originality* of the movie narratives. In noting the extent to which scenes from the STAR WARS films can be played out in

21 Jenkins, Henry: *Convergence Culture: Where Old and New Media Collide*, New York: NYU Press 2006.

the (non-virtual) LEGO Death Star model, Wolf's analysis similarly reminds us of the way such toys can be used to "play the film".[22]

However, there is yet another way to read these figures which is based around another way to play with these figures. Here, I'm thinking about the work of Henry Jenkins and particularly that of Jesse Schell.[23] In *The Art of Game Design: A Book of Lenses*,[24] Schell suggests that, despite the framing we note above, players would not necessarily use their figures to re-enact scenes from the movies. Instead, Schell argues, they would make up new stories and even give the figures new names unrelated to their canonical designation as they personalised them and the STAR WARS inspired storyworlds they created.[25] Once collected, the figures can be used in combinations that defy, amplify and extend the films' narrative, spatial and temporal logic.

In these examples, we find echoes of the distinction between playing and playing with STAR WARS. I believe this distinction is useful in giving us a way to think about the LEGO STAR WARS videogames, the design intentions that underpin and inform them, the condition of the STAR WARS universe and canon, and the role of fans in its negotiation and construction.

LEGO STAR WARS: THE VIDEO GAME

We begin our investigation by examining LEGO STAR WARS II: THE ORIGINAL TRILOGY.[26] This game focuses on the original trilogy of films. The first game was based on the prequels and was actually released just before the launch of

22 Wolf, Mark J. P.: *LEGO Studies: Examining the Building Blocks of a Transmedial Phenomenon*, New York: Routledge 2014.

23 Jenkins, Henry: *Convergence Culture: Where Old and New Media Collide*, New York: NYU Press 2006; Jenkins, Henry: "What We Talk About When We Talk about Star Wars," Confessions of an Aca-Fan, 2015, http://henryjenkins.org/2015/12/what-we-talk-about-when-we-talk-about-star-wars.html

24 Schell, Jesse: *The Art of Game Design: A Book of Lenses*, New York: CRC press/Taylor & Francis group, 2015.

25 Ibid., p.336.

26 LEGO STAR WARS II: THE ORIGINAL TRILOGY (Lucas Arts 2006, O: Traveller's Tales)

REVENGE OF THE SITH[27] thereby allowing players to explore Anakin's turn to the Dark Side before watching it on the silver screen.

Viewing the promotional video trailer for this game, a few things become immediately apparent. The game (and the trailer's editing) are demonstrably playful—and ripe with humour. The presence of humour is notable partly because it is not a quality immediately associated with the STAR WARS movies (notwithstanding the kind of slapstick that Brooker among others have noted as causing difficulties for fans coming to THE PHANTOM MENACE).[28] Indeed, we might go further in suggesting that the LEGO STAR WARS videogames' humour is notable because it is not typically evident in videogames at all.

LEGO STAR WARS: THE VIDEO GAME also seems to operate at the intersection between reverence for the STAR WARS canon and a playful extension and reworking of it.[29] The game spends much of its effort remaking—or perhaps that should be rebuilding—STAR WARS in new configurations. And the idea of rebuilding is important. As the name suggests, this is not simply a STAR WARS videogame. This is a very much a LEGO STAR WARS videogame. The final part of the trailer showcases the ability to combine the various STAR WARS characters in new ways to create hybrids simultaneously located within STAR WARS while markedly and playfully out of place. "Darth 3-PO?" asks the voiceover with mock incredulity as the head, body and leg-swapping qualities of physical LEGO are mimicked on screen. This reconstruction of this affordance in the virtuality of the LEGO STAR WARS videogame is something we will return to later when we consider the complex interrelationship between the textuality of STAR WARS' transmedia world, but here it serves as a reminder that this is a game unequivocally set in the world of STAR WARS as constructed from LEGO bricks—reconstructed in virtuality.

While working on an earlier study of game development and immediately before the release of the first LEGO STAR WARS videogame, I (along with co-author Iain Simons), interviewed Jonathan Smith, development director for the project, who commented on the game's *LEGO-ness*.

"There's a moment in the videogame where we recreate a scene from Episode II, and the location is a clone factory designed for the production of cloned beings. In the game, we

27 REVENGE OF THE SITH (USA 2005, D: George Lucas)

28 THE PHANTOM MENACE (USA 1999, D: George Lucas)—See Brooker, W.: *Using the force: Creativity, Community, and Star Wars Fans*, New York: Continuum 2002.

29 LEGO STAR WARS: THE VIDEO GAME (Lucas Arts 2005, O: Traveller's Tales)

recreate this environment—where in the movie there are tiny foetuses in glass jars, we have the irreducible 1x1 lego stud. It's a stem cell, it can grow into anything."[30]

We should not underestimate how pleasurable it is to run around, blast everything in sight and watch it disintegrate into tiny bricks. As Smith suggests, that the brick is the world's unsplittable atom serves as a constant reminder that this game is made of—and in—LEGO. But more than that, the centrality of the brick fashions this as a game that, in part at least, is not just made with LEGO but that is *about* LEGO and the permission, openness and freedom to play that the brand promotes.

The permission and freedom afforded by LEGO allows for some unexpected and, I would argue, unique design approaches to STAR WARS as a videogame. In recounting, there-development discussions, Smith notes.

"When we went to Lucas at the start, their initial response was, well we're already doing Star Wars games. We had to emphasise the LEGO experience, just how special this is going to be. This isn't the game of the movie. This is the game where you play with the movie."[31]

Smith's mention of playing *with* the movie is absolutely crucial and we see sequences in the LEGO STAR WARS videogames that truly push at the boundaries of STAR WARS (and in some cases, way beyond the boundaries of canon and even its Universe whether *Expanded* or otherwise). Given how debated and contested the canon is (as I alluded to in relation to Dash, the Outrider and *Shadows of the Empire*) this extent of the playful extensions and transgressions might be quite surprising. Let's see some examples...

PLAYING WITH STAR WARS FANDOM

The Stormtrooper *Hot Tub* is, on one level, plain silly—and joyfully so. It also reminds us of the myriad fan films, cartoons, and fictions that postulate (sometimes for serious and sometimes for comic effect) just what it is that stormtroop-

30 Newman, James/Simons, Iain: "Playing with Star Wars," in Page, Ruth/Thomas, Bronwen (eds.), *New Narratives: Theory and Practice*, Lincoln: University of Nebraska Press 2011, p. 249.

31 Ibid.

ers do all day on the Death Star. In fact, J.J. Abrams' EPISODE VII: THE FORCE AWAKENS hints at an otherwise un-represented mundanity when erstwhile hero and defecting Stormtrooper Finn announces that he worked in the sanitation department.[32] The Empire must have a sanitation department, right? It is as though J.J. and TT Games are in direct conversation with Dante Hicks and Randal Graves from Kevin Smith's CLERKS as they question whether the contractors killed as the second Death Star explodes are innocent victims.[33]

That there is also a Hot Tub in the latest LEGO STAR WARS: THE FORCE AWAKENS videogame reminds us that these playful "behind the scenes" extensions of STAR WARS are not one-offs but have become,[34] in their own way, part of the *LEGO* STAR WARS universe and canon, expected and hunted for as any *Easter Egg* in any game—or movie.

The Imperial Disco is another now-common feature of LEGO STAR WARS games and, again, reminds us that life is not all work on the Death Star and that Stormtroopers have a social life, too. It also activates memories of the disco craze of the 1970s that saw recordings such as *Star Wars and Other Galactic Funk* reworking John Williams' STAR WARS themes and topping the Billboard charts in the US.

As we can see already, although Jonathan Smith talks about a game that *plays with the movie*, I think there is even more to the LEGO STAR WARS videogames than this. These games are acutely aware of STAR WARS fandom, its defining function, and their role within it. The LEGO STAR WARS videogames do not merely obliquely allude to but rather explicitly reference fan art and fiction and the situations and tropes of fan cultural production. Moreover, these games function dually within the official canonical world of STAR WARS' licensing and business, and take part in precisely the same making and remaking of STAR WARS through their playful reconfigurations and extensions of the universe.

So, these are videogames that recognise the shifting nature of STAR WARS itself as it is made and remade both by fans and also by Lucas who has returned to the material many times to alter it thereby serving to render it a demonstrably malleable suite of materials ripe for reconfiguration, remaking and replay. The inclusion, albeit fleetingly, of the Outrider in the Special Edition of EPISODE IV is confirmatory of the plasticity of the STAR WARS universe.

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32 EPISODE VII: THE FORCE AWAKENS (USA 2015, D: J.J. Abrams)

33 CLERKS (USA 1994, D: Kevin Smith)

34 LEGO STAR WARS: THE FORCE AWAKENS (Warner Bros. Interactive Entertainment 2016, O: TT Fusion)

Just as fans make links in their artistic creations to other videogames (e.g. with Stormtroopers confronted with a giant Space Invader opining that "this is not the droid they're looking for") or to other related films (e.g. using LEGO minifigures to create vignettes in which Harrison Ford arrives on the STAR WARS set dressed as Indiana Jones much to the LEGO George Lucas' chagrin), so too do we see these precisely these kinds of playful reconfiguration in the LEGO STAR WARS videogames. Indiana Jones is available to activate and play in the STAR WARS games, albeit via a slightly circuitous route that presents a ludic challenge and alludes to the transmediality of the material in play. By entering the *Trailers* room and watching the (forthcoming at the time of release) LEGO INDIANA JONES: THE VIDEO GAME trailer,[35] Indy is unlocked and becomes available *for purchase* (using the in-game LEGO currency) alongside the other STAR WARS characters. (Indeed, and squaring the the circle, a number of STAR WARS characters are unlockable in the LEGO INDIANA JONES videogame). If we needed a reminder that these games are not only parts of expansive storytelling systems but also highly integrated global business, this is surely an eloquent example.

PLAYING WITH TRANSMEDIALITY

In the most recent LEGO STAR WARS: THE FORCE AWAKENS videogame, the player can wander *backstage* to find J.J. Abrams and Kathleen Kennedy blocking out shots against a greenscreen. Not only do we need no longer wonder what Stormtroopers do in their downtime, but we are now left in no uncertain terms that we are playing a game. Or rather playing with a transmedial storytelling system in which the game—and thus, the player—is part of a feedback loop of gameplay, moviemaking, and the creative *playbour* of fandom.[36]

Sequences like these, remind us that these games are not adaptations or *games of the films*, but take part in complex networks of meaning that engage with cultures of production and fandom. Here, we see videogames, films, physical LEGO toys (and plenty of other things) are in dialogue with one another.

There can be little doubt of the increasing influence of videogames on STAR WARS. We can see it in the *Podrace* sequence in EPISODE I: THE PHANTOM

35 LEGO INDIANA JONES: THE VIDEO GAME (LucasArts 2008, O: Traveller's Tales)

36 Kücklich, Julian: "Precarious Playbour: Modders and the Digital Games Industry," in: *The Fibreculture Journal* 5 (2005), http://five.fibreculturejournal.org/fcj-025-precarious-playbour-modders-and-the-digital-games-industry/

MENACE which is both directly inspired by racing videogames as well as providing its own opportunity to create a new Podrace videogame.[37] And we can see it in the Geonosian Droid Factory which places Padme and Anakin in precisely the kind of platform game environment replete with spatial puzzles, obstacles and enemies that Mario or Sonic would feel right at home in.

But we see it also in the production of LEGO STAR WARS movies that effectively extend the storytelling found in the cutscenes in the game and extend them into mini-features. And it is here that the distinctive LEGO-ness of the contribution is felt. Taking the (non-interactive) animation style from the games' cutscenes and reconstructing them as new, playful, extended narratives that do similar work in playing with the production, consumption and fandom of STAR WARS, the LEGO STAR WARS movies continue to dismantle the fourth wall. In THE PADAWAN MENACE,[38] for instance, a LEGO George Lucas explains to a disbelieving and increasingly angry Darth Vader that he's not needed in the scene being filmed now he is no longer the *baddie*.

Perhaps the best and most comprehensively intertextual example, however, is found within the EPISODE II: ATTACK OF THE CLONES movie where we see a computer-generated C-3PO's head and body swapped with a Battle Droid—just as though he was a LEGO minifigure.[39] A virtualised LEGO minifigure played with by the film director and simultaneously echoing, legitimising and prefiguring the creation of Darth 3-PO et al. And, just as Lucas plays and replays with his CG C-3PO, so the player of a LEGO STAR WARS videogame becomes a virtual author of new dimensions of the STAR WARS universe.

Of course, the mention of *dimensions* should remind us of the notable absence of STAR WARS characters, vehicles and locales from the more recently released LEGO DIMENSIONS game world.[40] As such, while we might celebrate the ways in which LEGO lends its permission to play and play with the materials and ideas of popular media, it is essential to note that, regardless of how playful or reverential, devoted or transgressive a players intentions might be, the permission to play *at all* is ultimately granted by Disney as legal owner of these properties.

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37 EPISODE I: THE PHANTOM MENACE (USA 1999, D: George Lucas)

38 THE PADAWAN MENACE (20th Century Fox Home Video 2011)

39 EPISODE II: ATTACK OF THE CLONES (USA 2002, D: George Lucas)

40 LEGO DIMENSIONS (Warner Bros. Interactive Entertainment 2015, O: Traveller's Tales)

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Time, Memory, and Longing in Transmedial Storytelling

SUSANA TOSCA

INTRODUCTION: TIME MATTERS

The key to successful storytelling is timing: the efficient spacing of information that will get readers to feel anticipation and awaken the desire to know what happens next.[1] Stories have rhythms; they can drag, they can fly and they can take us on a rollercoaster of events and feelings. A good storyteller knows how to sow multiple seeds along the way so that they flourish later. This is equally true of stories in any media. Whether text, image, moving image, or computer game, all media depend on time to attain their aesthetic effect.

In the case of transmedial worlds, the role of time within the individual instantiations (films, books, etc.) is amplified by the fact that these stories exist within a network of other related narratives that all share the same mythos, topos and ethos.[2] Figuring out these connections is an important aspect of the transmedial experience. That is, there is a dimension to transmedial time that transcends the individual stories. Time in transmedial narratives is about relating plots, actions, characters and places to a wider network of meanings that are revisited and expanded with each interaction. This paper argues that the time of the transmedial world is imbricated with the personal time of the viewer/user in a

1 Brooks, Peter: *Reading for the Plot. Design and Intention in Narrative*, Cambridge, Mass.: Harvard University Press 1984.

2 Klastrup, Lisbeth/Tosca, Susana: "Transmedial worlds—rethinking cyberworld design," in: *DW2004 Cyberworlds Conference Proceedings*, Los Alamitos: IEEE 2004.

strongly emotional way, and proposes to use the notion of experience to elucidate how this is so. I will be illustrating this argument with examples from literature, cinema, television and computer games.

THEORETICAL FRAMEWORK: TIME, STORIES AND TRANSMEDIAL RECEPTION

Time is one of the key concepts in narrative theory, as its passing is necessary to produce causality, which informs concepts as important as plot, rhythm or suspense.[3] In literary studies, the topic of time has been a preoccupation of structuralist theorists focused on the act of narration, or modernist authors intent on encapsulating real human experience and questioning the linear nature of time.[4] Film studies has of course paid a lot of attention to the time-space continuum, which is vital to understand both modes of production, edition and viewing of this art form, as it is obvious from works such as Noël Burch's *Theory of Film Practice*.[5] In computer game studies, time has been examined from a ludological perspective (as necessary for algorithms to progress) and also as an aspect of the game world, and therefore of game stories.[6] Questions like linearity and non-linearity in representations of time have also been raised as means of differentiating old media from the new.[7] All these approaches can be said to be formalist in nature, and preoccupied with understanding the essential foundations of each of their respective media.

As for transmedial storytelling research, Colin Harvey has also identified memory as an essential topic.[8] He focuses mostly on issues of temporality within the transmedial universe itself, for example how the timelines of different instan-

3 Rimmon-Kenan, Shlomith: *Narrative Fiction*, New York: Routledge 2002, pp.43-59.

4 Moss, Katie: *The Power of Timelessness and the contemporary Influence of Modern Thought*, Doctoral Thesis, Georgia State University 2008.

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6 Juul, Jesper: "Introduction to Game Time," in: Noah Wardrip-Fruin/Pat Harrigan, *First Person: New Media as Story, Performance and Game*, Cambridge, Mass: MIT Press 2004.

7 Landow, George: *HyperText: The Convergence of Contemporary Critical Theory and Technology*, Baltimore: The Johns Hopkins University Press 1991.

8 Harvey, Colin B.: *Fantastic Transmedia. Narrative, Play and Memory Across Science Fiction and Fantasy Storyworlds*, London: Palgrave Macmillan 2015, viii.

tiations can be combined to maintain coherence or sometimes collide.[9] He also builds on ideas by Mittell and Evans by suggesting that transmedial storytelling can "add time" by expanding well known universes into new directions.[10] His thinking about time is thus mostly focused on the universes themselves, and not so much on the experience of the user.

Indeed, we can consider time from the point of view of the readers/ viewers/players, that is, of those who "receive" the stories. "Receiving" is by no means to be understood as a passive verb, since it entails quite an amount of interpretation and different kinds of deduction, decisions and (sometimes even) action, as proposed by both classical reception theorists,[11] and cultural studies researchers.[12] Iser famously coined the concept of "gaps," or structured blanks in the text that "stimulate the process of ideation to be performed by the reader on terms set by the text".[13]

More recently, the cognitive approach to literary criticism known as theory of mind suggests that the activity of reading fiction is a sort of mind reading, an extremely active endeavour where we have to "keep track of who thought wanted, and felt what and when",[14] and that naturally stretches over time. Reading is a difficult and rewarding activity, as there is great pleasure in navigating "these immensely complex, multi-leveled, ethically ambiguous, class-conscious, mutually reflecting and mutually distorting states of mind".[15]

In the case of transmedial stories, we not only need to keep track of minds, plot twists and gaps within one single story, but also to connect them with other plots and gaps in other stories within the same transmedial world. Memory is essential here, since our contacts with the transmedial world are typically not

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9 C. B. Harvey: *Fantastic Transmedia*, p. 88.

10 Ibid., p. 89.

11 Iser, Wolfgang: *The Act of Reading. A Theory of Aesthetic Response,* Baltimore: The John Hopkins University Press 1978; Eco, Umberto: *The Role of the Reade,* Bloomington: Indiana University Press 1979; Jauss, Hans Robert: *Aesthetic Experience and Literary Hermeneutics,* Minneapolis: University of Minnesota Press 1982.

12 Hall, Stuart: "Encoding and decoding in the television discourse," in: *Center for Contemporary Cultural Studies Stencilled Paper no. 7*, Birmingham: University of Birmingham 1973.

13 W. Iser: *The Act of Reading*, p. 179.

14 Zunshine, Lisa: *Why We Read Fiction. Theory of Mind and the Novel,* Columbus: The Ohio State University Press 2006, p. 5.

15 L. Zunshine: *Why We Read Fiction*, p. 21.

constant, but spread across days, months or even years. In non-interacting lapses, fans will keep the transmedial world alive but dormant in their heads, as a network of story connections, timelines and character relations that will be rekindled when they are immersed into a new story belonging to that world.

If we agree that the transmedial experience is a unified whole in which the interaction with any of the texts will "summon" all the other texts in our memories, then we need to tackle that experience in a way that goes beyond the one-text approach of reception theory. I am therefore inspired by the experiential framework of McCarthy & Wright, who in *Technology as Experience* argue that an experience is always situated, i.e., it is very much about what each individual brings to the situation.[16] The authors build upon John Dewey's ideas of conservation, accumulation, tension and anticipation[17] to formulate their framework. In this perspective, all experiences are dynamic, as new perceptions will be received against the backdrop of all previous experiences one has had. At the same time, each experience reshuffles our accumulated encyclopedia of experiences, adding new aspects and knowledge.

McCarthy and Wright understand experience as made of four threads (compositional, sensual, emotional and spatio-temporal) and six corresponding sense-making operations (anticipating, connecting, interpreting, reflecting, appropriating and recounting). They provide a multifaceted framework that we can use to understand any kind of experience, both the everyday ones and aesthetic experiences. In fact, any kind of experience has an aesthetic potential.[18] The framework is illustrated in the model shown (see *Figure 1: A Model of Experience*).

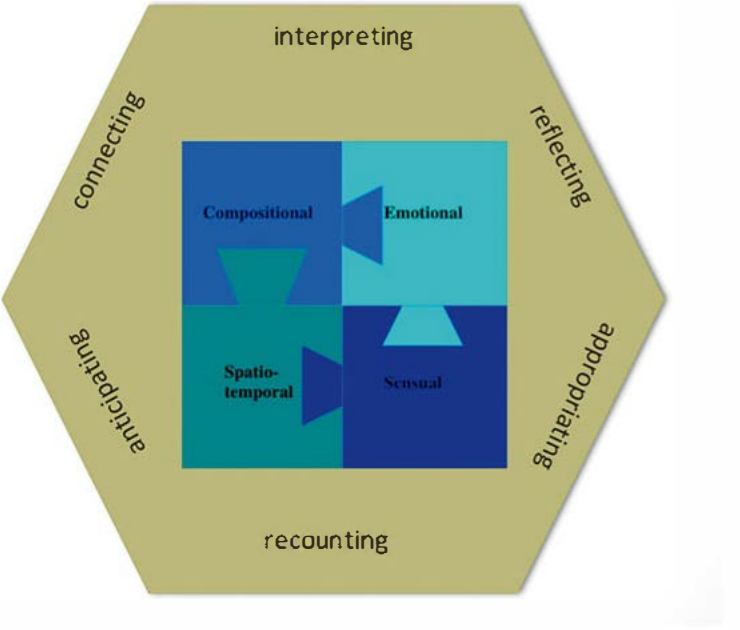
This essay does not intend to apply the model in an extensive way, but to create an awareness in the reader that any kind of experience does not only occur in the moment, but is temporally attached to both the past and the present. McCarthy and Wright have exemplified their framework with cases such as a visit to a store, dwelling on how the four threads that any experience is made of (the puzzle inside the drawing) fall into shape through the six sense-making operations (the hexagon in the drawing) that are in turn dependant on all our previous visits to stores and the expectations we have created. In the case of transmedial stories, any act of reception will be equally inserted in a meaningful net of contexts unique to the individual.

16 McCarthy, John/Wright, Peter: *Technology as Experienc,* Cambridge, Mass.: MIT Press 2004.

17 Dewey, John: *Experience and Nature,* LaSalle, Illinois: Open Court 1925.

18 J. McCarthy/P. Wright: *Technology as Experience,* p. 19.

Figure 1: A Model of Experience



Source: J. McCarthy, P. Wright. *Technology as Experience*.

Last week I went to the cinema with my family to see ROGUE ONE: A STAR WARS STORY. We all had our expectations according to what we knew of the transmedial universe and what we had read in the press about the new installment (which wasn't much). Our impressions on the way out were quite different. My son and I, who are devoted fans of the universe, could relate plot lines and details to a vast net of meanings from which we derived much pleasure. My daughter, who is more of a casual viewer, could not situate the film within the broader transmedial timeline and was confused throughout the film viewing experience ("But Darth Vader is dead! How can he be back?"). My husband was expecting a more innovative approach and was disappointed by the repetition of many of the transmedial world tropes. The film was the same for all of us, but the experience was not. A close examination of the sense-making operations of anticipating, connecting, interpreting, reflecting, appropriating and recounting could show in which ways our acts of reception differed from each other. Anticipation is about expectations. Connecting is about relating the new experience to old ones. Interpreting is about understanding what is going on. Reflecting is about becoming aware of our own emotions and evaluations. Appropriating is

how we make the experience meaningful to ourselves and place it into our "vault of experiences," already originating expectations for the next one. Recounting is how we can use the experience actively as a theme to understand other things and share it with others. All these aspects require our mind to flash back and forth between past, present and future.

In other words, time matters. A lot. In reception studies and transmedial research, we often talk about the user's knowledge of transmedial universes as a static thing, as a repository of knowledge. My point in bringing McCarthy and Wright into this discussion is that active reception is not only about *what* we know and experience, but also about *when*: When did we first experience a transmedial world? When did we experience the next instantiation? When do we want to engage with that world again?

THE ORIGINS: MEMORY AND LONGING IN TRANSMEDIAL RECEPTION

The research on transmedia that I have conducted with Lisbeth Kastrup during the last fifteen years has often involved talking to fans of different transmedial worlds. One of the most striking things in our qualitative work has been the strong emotional reactions that we have collected every time fans have had to reflect on the beginning and duration of their engagement with transmedial universes. Every fan remembers their first encounter with their beloved transmedial world: where they were when they read *Lord of the Rings* for the first time, the colour of the book and how long it took them to read it, how this reading prompted them to search for more material or to play roleplaying games or to visit certain countries. Everyone has a different story, but all of their initial experiences are equally intense. Many of their later experiences become meaningful by being connected to the first one:

"Almost every time I've been in a new area that was taken directly from the books, I stop and marvel at some of the people, objects and places that are almost exactly like I imagined it. Man, the first time I stood on Weathertop and gazed out over the lone-lands... just magical." (player, LOTRO)[19]

19 LORD OF THE RINGS ONLINE is a MMORG (Massive Multiplayer Online Roleplaying Game) launched in 2007 and still operating at the time of writing.

We can compare our first experience with a transmedial world with a stone that falls into a pond. The stone shakes the pond and the ripples in the water are the after-effect of the forceful entry. We see the ripples as all our attempts to revisit, reenact and recreate the worlds that were so compelling. The "re" prefix very tellingly indicates repetition, coming back. Our empirical studies suggest that fans of transmedial worlds do want to keep coming back, not only to the world itself, but also to the first time they encountered it. There is a fascination with the first experience, which is seen as the purest and strongest, and also a fascination with whom they themselves were at that time of innocence. Of course, this longing has a name.

Svetlana Boym has beautifully defined nostalgia as a yearning for the time of our childhood:

"Nostalgia (from *nostos*—return home, and *algia*—longing) is a longing for a home that no longer exists or has never existed (...) a sentiment of loss and displacement, but it is also a romance with our own fantasy"[20]

Very often, attachment to transmedial worlds develops in childhood or the teenage years, so that the transmedial experience becomes synonymous with our lost paradise. Producers of content are apt at harnessing this nostalgia. When Han Solo/Harrison Ford says "Chewie, we are home" at the end of the trailer for STAR WARS: THE FORCE AWAKENS (2015), he is not only talking about the characters' return to their spaceship and their old adventure ground. He is also beckoning us, the spectators, to return to our childhood or younger years, when we saw the original trilogy for the first time. For new fans, this will not register emotionally in the same way, but it can still point to the 'history' behind the transmedial world in ways that can also be meaningful, if less intense.

This special relation to the original encounter with the world has been present in all our conversations with fans of universes like THE LORD OF THE RINGS, STAR WARS and even GAME OF THRONES. An area that has proven to be very rich to trace this kind of nostalgia is the many discussions online of fans considering when to introduce others into their beloved universe, for example, when (and how) to show your kids the STAR WARS movies: is 4 years too young? Should they see the old or the new films first? These things matter a lot to loving parents trying to create the best possible experience for their kids, an experience that will hopefully be as important for them as it was for their own younger

20 Boym, Svetlana: *The Future of Nostalgia*, New York: Basic Books 2001, p. xiii.

selves. Even the fans without kids care about how others are introduced to the transmedial universe and envision the introduction to the STAR WARS universe as an important rite of passage for identity formation:

"If I were to have kids, I would share Star Wars with them as soon as I thought they were old enough to comprehend it and sit still long enough to watch it through. We could talk about the cool stuff, or the deep stuff, or anything else, and I would have shared something I love with someone I love."[21]

Fans of transmedial worlds treasure their own initiation as a quasi-religious ritual moment. The vividness of their recollection is a treasure for an experience researcher:

"Let us go back to the year 2001. I was 4 at the time when I saw Star Wars for the first time. My dad worked nights and every night he would come home and watch tv for a few hours. I remember him waking me up late at night telling me there was this cool movie on tv that I had to watch. So I walked into our living room with my eyes still full of sleep and my dad sat me down in his lap.
I was instantly blown away by what I saw. Talking robots, this big mysterious Darth Vader guy with an awesome voice, swords made of light, space ships flying around and getting in epic dog fights! I was too young to truly understand the deeper meanings of the story of course but that didn't stop my enjoyment of the movie.
My entire childhood I was obsessed with the Star Wars universe. While most kids wanted to grow up to be astronauts and pro athletes I wanted to be a Jedi!
Don't let the fact that your kids are young stop you from introducing them Star Wars. It's a magical world that anyone from any age group can fall in love with.
May the force be with you!" (Jarad Mertens, life long STAR WARS fan)[22]

This argument shows a multifaceted experience where the four threads described by McCarthy and Wright are visible: the sensual/aesthetic strong impression, the compositional effort to understand, the emotional response that is both related to the film and the person's father, and the spatio-temporal dimension of the embodied situation. The past moment has gained even more significance as the fan

21 Lager, Marshall: "Hooked since 1977," https://www.quora.com/Why-do-parents-let-their-kids-watch-Star-Wars-at-such-a-young-age-4-7-years-old-for-example

22 Ibid.

is now an adult and the days of his childhood (and his introduction to STAR WARS) are far back in time.

Returning to the original experience is the main motivation behind what I have elsewhere called transmedial desire, "a pulsion common to enthusiastic audiences that are driven to seek more contact with the fictions they love, turning them into transmedial worlds in the process."[23] In "We Have Always Wanted More," I proposed to differentiate between three kinds of desire, that of experiencing more of the transmedial world, that of inhabiting it (bringing it into the material world) and that of transforming it.[24] All three desires originate in that auspicious first meeting with the transmedial world and are at the origin of lifelong fandom.

TRANSMEDIAL RHYTHMS

Beyond establishing first contact with the transmedial world, time is also important in the ways that continued reception is planned and carried out. Producers follow established rhythms in order to release novels, series (seasons), videogames and films. Fans can comply and adjust their reception to the producer's rhythm, or they can choose to do otherwise. Producers often assume that enthusiasts will be waiting for their favourite series and viewing it as it is released. However, talking to fans, it is obvious that there also are other viewing patterns, such as so-called 'binge watching' (watching a whole season of a series in one sitting).[25] Some people purposedly keep away from their favourite series, just to be able to gobble it all in a very intensive and short period of time. This provides them with a more intensive immersion,[26] and it seems to especially be the case in series that are part of transmedial universes. People report enjoying "being inside" the universe and also being better able to have an overview of complex plot lines when there is no pause between installments. Like in the famous Stanford ex-

23 Tosca, Susana: "We Have Always Wanted More," in: *International Journal of Transmedial Literacy*, 1/1. (2015), p. 36.

24 S. Tosca: "We Have Always Wanted More."

25 This can be anything from for example 8 to 14 episodes of one hour or more. People report watching them over a couple of intensive days.

26 Pena, Lesley Lisseth: *Breaking Binge: Exploring the Effects of Binge Watching on Television Viewer Reception*. Dissertations. Paper 283. University of Siracuse 2015, p 57.

periment of the children and the marshmallows, it would seem that some transmedial viewers are capable of shunning immediate pleasure in exchange for a greater gain (delayed gratification). They control time, and in this way, they take the reins of their own experience.

Some transmedial universes encourage simultaneity, understood as following/watching installments at the same time as the producers release them. For example, the TV series DEFIANCE, that was launched at the same time as the video game kept a tight connection between events across the television and game screen. The game would propose certain missions that would have an effect in the next episode, sometimes even the best performing players could see their name in props used in the fictional world. At some point, the winners of a particular quest were invited to be extras in one of the episodes. There is no doubt that playing at the same time as viewing was richly rewarded; the transmedial universe was extremely inclusive of simultaneous users. At the same time, it created a steep barrier of entry for all those who did not join at the right time. Watching the series now, one could feel excluded knowing that all the openings for participation are closed. The same kind of challenge to participation is true of ARGs (Alternate Reality Games), which are very interesting for the group of committed players who were there from the start, but rather excluding for all those others who arrive too late.

Generally, it pays to let oneself be carried along with the producer's plans, but sometimes, trust is broken. Transmedial world enthusiasts never forget when producers have slighted them: a beloved video game character that changed personality, a breach of a canonic timeline, a bad solution to an enigma. A very specific way point of conflict has to do with rhythm, and is very obvious in television series. The final episode of a season ends on a high note to create suspense and interest for the season to come. Sometimes, waiting is highly rewarded, as we have noted in connection to the series SHERLOCK.[27] Other times, something goes wrong.

An example of broken rhythm could be the transition from season 6 to 7 of THE WALKING DEAD. In the season 6 finale, most of the protagonists are taken prisoner by a brutal antagonist who threatens to kill one of them with his baseball bat. The final episode ends with all the characters lined up on their knees, waiting for the death blow. Fans felt betrayed by the huge cliffhanger, and the conversation in the different fora was about how the show could ever possibly

27 Klastrup, Lisbeth/Tosca, Susana: "The Networked Reception of Transmedial Universes—An Experience-Centered Approach," in: *MedienKultur* 32/60 (2016).

make it up to them. After seven months of waiting, the Internet was on fire by October 23, 2016, the night of the premiere. Thousands of people had been twitting for days, wondering who would be killed, and confirming with each other that the suspense was unbearable. As soon as the episode reached the murder scene, where two beloved characters have their heads brutally smashed in, the twitting frenzied. Although many fans were satisfied, at least just as many felt betrayed.

"Who ever wrote this episode is the most sadistic and disturbed person on the planet. Damnnnnnnn #TheWalkingDead" (Erin Vermeulen)
"i thinkim giving up on this show. i simply.. cannot #TheWalkingDead" (Asia Burris)

Also, many journalists reacted against the extreme explicit violence.[28] The consensus online was that the show had gone too far in order to engage its audience emotionally, making many fans reach a tipping point where they just did not care anymore. I remember that my immediate impression was that the show had sacrificed two characters with excellent story arcs for the sake of a cheap trick. In a way, it was strange to feel outraged, because we had known all along what was coming: someone we liked was going to die.

If we return to McCarthy and Wright's model of experience and the sense-making operation of anticipation, it can help us understand why the baseball bat murder scene was artificially extended for an extremely long time. Something that would take a few minutes in real life, had been "open" for seven months, where fans had used the Internet extensively to ponder what would happen, or rather, who would die.[29] Anticipation is usually satisfactory if our predictions are revealed to be accurate, our expectations met. Suspense is a special form of anticipation that is more satisfactory when we are surprised. The season 7 premiere satisfied neither anticipation nor suspense. We could not properly anticipate because the choice of the victims was random, and the surprise was also impossible since we had had ample time to consider all the possible victims. In other words,

28 See for example http://www.theverge.com/2016/10/24/13378876/the-walking-dead-season-7-premiere-recap-review-end-of-quitters-club or http://uproxx.com/hitfix/why-im-breaking-up-with-the-walking-dead/, both accessed 7th January, 2017

29 The TV series is based on a comic book of the same name, where this confrontation with the Negan character is also present. The series doesn't follow the book exactly, so even though many fans were aware of the comic book outcome, nobody could know what would happen.

we had been had. And for nothing. Seven months into our experience, we were denied the sense making operations of connecting, interpreting, reflecting, appropriating and recounting.

Now think if the writers instead had shown the very same murders in the last episode of season 6, and ended with the reactions of the other protagonists. Then we, the fans, would have been left with the question: what are they going to do now? This could actually provide real suspense and enough anticipation to occupy fandom for seven months and a more satisfactory experience path.

The previous section was about appropriating transmedial beginnings. This section has dealt with the struggles that can occur when the rhythms of producers and audiences collide, resulting in different kinds of struggle. In the next section, we will look at examples of fans using the transmedial world for their own purposes and producing experiences of their own.

USER TIME

The last aspect related to the experience of transmedial works and time has to do with the awareness that audiences develop about their own reception journey. This was also obvious in the above examples of STAR WARS parents trying to decide what and how to share their kids. But it becomes even more obvious in the Internet phenomenon known as "reaction videos," where people who are watching some shocking or surprising content are filmed by relatives or friends who know than an emotionally intense moment is coming. Lisbeth Klastrup and I have studied this phenomenon in relation TO GAME OF THRONES.[30]

In the case of transmedial content, the rich net of connections across the different instantiations (book, comic, film, tv) means that audiences have divergent degrees of knowledge when experiencing the stories. In our memories about the transmedial universe, we especially treasure the moments that were significant for our own emotional journey. This could for example be a plot twist that turns into a great victory, or the death of a beloved character. When our friends or relatives get to that point in the story, we film it because we want to preserve and share the moment of intense experience. It is a sort of emotional reenactment by proxy, and it often works as a rite of passage in which new fans are finally welcomed into the community of the knowledgeable:

30 L. Klastrup/S. Tosca: *The Networked Reception of Transmedial Universes.*

"You can always tell who's read the books because they always have that shit-eating grin on their faces like 'Yeeesssssss, now you understand our pain!' Watching my roommate (who hadn't read the books) react to the Red Wedding was priceless." (Tan Railgun)
"Man I remember going to school the day after this aired. Since I had read the book I knew this was coming but I didn't watch the episode since I don't have pay tv (which is why I read the books first to begin with). anyway the next day I walked up to some of my friends who watched the show and asked 'So, How was game of thrones last night?' and got a very good rant out of them XD." (Red Panda)

Audiences are aware of their own reception and that of others, and consider it worth it to document. This acute focus on the value of personal experiences can no doubt be related to other online practices like watching other people play videogames or unpack boxes (two very successful tropes in YouTube). In relation to McCarthy and Wright's model, we can say that fans are appropriating the experience by building another experience on top of it (the reaction video), which in turn affords the operations of anticipating, connecting, interpreting, reflecting, appropriating and recounting. In this perspective, the user's own time, or rhythm of reception, is superposed on the times and rhythms of the transmedial world, generating its own experiential chronology.

CONCLUSION: THE EMOTIONAL THREAD OF TRANSMEDIAL EXPERIENCE

This article has looked at the different ways in which time matters to users of transmedial experiences. From the strong first impression of discovering the world to following its developments and making efforts to engage others in the stories that mean something to us.

At the beginning, I proposed to combine reception studies with a broader understanding of experience as advocated by McCarthy and Wright. The reason was to account for an experience of time that was more attached to the user than to the formal constitution of the fictional world.

The examples from our empirical studies illustrate that the question of time in relation to experiencing transmedial worlds has a decidedly emotional component, and, perhaps surprisingly, a social component as well. Transmedial universes become thus integrated in people's own life stories and in their relations with others: children, partners, friends. There seems to be a double movement of engagement with the past (a sort of regression or going back to the first innocent

experience) and the future (a projection and anticipation of what might happen next in the transmedial world).

Tracing paths of engagement with transmedial worlds is thus mostly about investigating productive intersections of time and emotion. The transmedial world exists in our minds, and its timelines are intertwined with those of our own life, creating desire, pleasure and disappointment. I would like to finish this essay with wise words from PRINCE OF PERSIA: THE SANDS OF TIME, a videogame where time is the central theme. They encapsulate the cyclical nature of transmedial time:

"Most people think time is like a river that flows swift and sure in one direction, but I have seen the face of time and can tell you they are wrong. Time is like an ocean in a storm."

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Playing with Stories, Playing in Worlds

Transmedia(l) Approaches to Video Games

HANNS CHRISTIAN SCHMIDT

It has been almost 30 years since Marsha Kinder established the notion of "transmedia" in her significant study *Playing with Power*[1] and more than ten years since Henry Jenkins coined the influential term "transmedia storytelling" in his seminal publication *Convergence Culture*.[2] Since then, numerous perspectives have been applied to the term. However, as Torop and Saldre point out, most of these publications highlight a sense of *space* in products of modern entertainment franchises, a quality in turn becoming a "topological invariant of all the subtexts of transmedia whole."[3] This holds especially true for terms like "worldbuilding,"[4] "storyworlds,"[5] or "cinematic universes." Given that exploring

1 Kinder, Marsha: *Playing with Power in Movies, Television, and Video Games: From Muppet Babies to Teenage Mutant Ninja Turles*, Berkeley et al.: Univ. of California Press 1991.

2 Jenkins, Henry: *Convergence Culture: Where Old and New Media Collide*, Updated and with a new afterword (New York, NY: New York Univ. Press, 2008)

3 Saldre, Maarja/Torop, Peeter: "Transmedia space," in: Indrek Ibrus/Carlos A. Scolari (eds.), *Crossmedia Innovations: Texts, Markets, Institutions*, Frankfurt/Main: Peter Lang 2012, pp. 25-26.

4 Wolf, Mark J. P.: *Building Imaginary Worlds: The Theory and History of Subcreation*, New York: Routledge 2012.

5 Herman, David: "Storyworld," in: ed. David Herman/Manfred Jahn/Marie-Laure Ryan, *Routledge Encyclopedia of Narrative Theory*, London: Routledge 2000.

spaces in an 'interactive'[6] way is one of the essential qualities of video games (and also because both Kinder and Jenkins emphasize video games as an important part of transmedial franchises), it seems productive to further investigate what kind of role games play in contributing to a larger 'world' which is dispersed across different media channels.

In what follows, I will outline a very brief overview of the terms "transmedia" and "transmediality," explain how transmedial games complicate our understanding of storyworlds that have been already established in our minds, and close by having a short look at how different games with completely different gameplay mechanics may achieve 'positive synergies'—a term borrowed from Trevor Elkington[7]—with their medial core texts. These three case studies will hint at a much larger, two-folded research question: How are transmedial worlds produced and how are transmedial worlds perceived, especially if they are expanded to the domain of video games? Or, to put it differently: How are transmedial worlds 'built'—in the sense of the aesthetic and narrative qualities of certain media products—and how are these worlds 'made'—in the sense of cognitive engagement of readers, players or an audience?

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6 The key term of 'interactivity' is often discussed, extended and / or replaced by supposedly better matching terms. A full-fledged discourse analysis of it cannot be done at this point, but I hope it is enough to show very briefly how other scholars, in this case Toby Smethurst and Stef Craps: "Playing with Trauma: Interreactivity, Empathy, and Complicity in The Walking Dead Video Game," in: *Games and Culture* 10/3 (2015), use and re-define the notion of interactivity to illustrate my point. As some critical voices argue, all artistic (and especially literary) artefacts beg the necessity to interpret them, thus rendering these works as 'interactive' as video games. That is why the authors prefer the concept of "reactivity" and, finally, "interreactivity": "Reactive," because literary texts, unlike computer games, remain static by interacting with the medium (computer game worlds can usually be changed) and interreactive, because the interpretation of the narrative elements also plays an important role in the player's experience (pp. 272-273). This form of the terminological arrangement may, at first sight, solve many technical difficulties, but it is ultimately unclear whether such conceptual propositions can stand the test of (academic) time.

7 Elkington, Trevor: "Too Many Cooks: Media Convergence and Self-Defeating Adaptations," in: Bernard Perron/Wolf, Mark J. P. (eds.), *The Video Game Theory Reader 2*, New York: Routledge 2009.

1. INTRODUCTION: TRANSMEDIA AND THE CASE OF THE MISSING "L"

What does 'transmediality' mean—and how is it in any way different from the obviously related term 'transmedia'? According to Henry Jenkins—who is responsible for the outburst of writing about what he calls "transmedia storytelling"— the term 'transmedia' means quite simply 'across media.'[8] So, as it is suggested by Gabriel et al.,[9] we could indeed make a detailed taxonomical distinction to label the two terms for different kinds of case studies; but, for the sake of simplicity, I would instead opt for Jenkins' approach and treat the two terms synonymously. However, one has to keep in mind that the theoretical discussion about transmedial phenomena could at least be traced back to ancient Greek philosophy, while the term transmedia has somewhat gained recognition in the discourse about popular entertainment franchises in the 1990s. This is in no way meant to divide different cultural (or even 'artistic') forms of expression in a rather old fashioned model of 'sincere' and entertainment artefacts (as it has been put forward by the Critical Theory of the Frankfurt School), but simply to underline that transmedial phenomena are nothing new, as scholars like Marie-Laure Ryan have already stated on several occasions:

"Historians can put this claim [the novelty of transmediality, HCS] in perspective by pointing out the dissemination of Greek myth through various artistic media—sculpture, architecture, drama, epic—or, closer to us, the multiple modes of distributing biblical stories in the Middle Ages. These stories were not only written in books, which most people could not read; they were also retold orally during sermons, enacted in passion plays, illustrated through paintings and stained-glass windows, and they even inspired the inter-

8 Jenkins, Henry: "Transmedia 202: Further Reflections," accessed October 4, 2016, http://henryjenkins.org/2011/08/defining_transmedia_further_re.html; for a comprehensive overview see Eder, Jens: "Transmediality and the Politics of Adaptation: Concepts, Forms, and Strategies," in: Dan Hassler-Forest (ed.), *The Politics of Adaptation: Media Convergence and Ideology*, Basingstoke: Palgrave Macmillan 2015.

9 Gabriel, Nicole/Kazur, Bogna/Matuszkiewicz, Kai: "Reconsidering Transmedia(l) Worlds," in: Claudia Georgi/Brigitte J. Glaser (eds.), *Convergence Culture Reconsidered: Media—Participation—Environments*, Göttinger Schriften zur englischen Philologie 9, Göttingen: Universitätsverlag 2015, pp. 163-194.

active phenomenon of the stations of the cross, where pilgrims relived the *Passion of Christ* by following a fixed itinerary dotted with little chapels."[10]

Thus, it is not surprising that transmedial phenomena have been a research interest already for quite some time, albeit under different labels. As Ryan already suggests, a brief (narratologically informed) history of transmediality could start at the reflections of Plato and Aristoteles (how does a certain form of representation mimic certain activities?)[11] and, according to Klastrup and Tosca, be traced to Lessing's considerations of the Laocoön-figures (how does a sculpture 'tell' a story, how does a literary text?).[12] Another timeline (again according to Ryan) would incorporate media studies themselves and take, among others, the works of Walter Ong, Jay Bolter, and David Grusin into account, who explicitly examined the influence of a medial 'container' on its content.[13] The question at the forefront of these examinations is more or less the same: What changes in the mediated content as the mediating medium changes? From that perspective, transmediality can be considered as a central issue of almost any field that is concerned with the analysis of representational artefacts.

Taken as a more independent concept, another theoretical trace leads to the field of something Christy Dena described as "intercompositional relation theories":[14] According to Dena, those theories establish connections between artefacts of the same or different medialities, namely intertextuality (which mainly deals with 'texts' in the sense of medial content, mostly literary works; Bakhtin,[15] Kristeva,[16] Genette),[17] transtextuality (which is Genette's revised term for

10 Ryan, Marie-Laure: "Transmedial Storytelling and Transfictionality," in: *Poetics Today* 34/3 (2013), p. 362.

11 Marie-Laure Ryan (ed.), *Narrative Across Media: The Languages of Storytelling*, Frontiers of Narrative, Lincoln: Univ. of Nebraska Press 2004, p. 13, p. 22.

12 Klastrup, Lisbeth/Tosca, Susanna: "Transmedial Worlds: Rethinking Cyberworld Design," http://www.cs.uu.nl/docs/vakken/vw/literature/04.klastruptosca_transworlds.pdf

13 M. Ryan: *Narrative Across Media*, pp. 16-32.

14 Dena, Christy: *Transmedia Practice: Theorising the Practice of Expressing a Fictional World Across Distinct Media and Environments* (2009), p. 110.

15 Bakhtin, Mikhail: *The Dialogic Imagination: Four Essays*, with the assistance of Michael Holoquist, and Carly Emerson, Austin: Univ. of Texas Press 1981 [1930s]).

16 Kristeva, Julia/Toril Moi: *The Kristeva Reader*, Oxford: Blackwell 1986.

intertextuality),[18] transfictionality (which looks at the migration of different formal elements in fictional worlds),[19] and, finally, intermediality. The concept of intermediality is a somewhat special case due to its inconsistent use, its different definitions and the numerous systematics which have been built around it by many European (especially German) scholars in the recent past (see for example Wolf[20] vs. Schröter[21] vs. Rajewsky).[22] Typically, intermedial approaches capture transmedial phenomena (like adaptations) as well, albeit tend to use slightly altered intermedial terms.[23] To get things straight and avoid overwriting already existing transmedial approaches, it is helpful to point to a very productive use of the concept of intermediality: the examination of the combination and fusion of different aesthetic media styles and semiotic codes in one single medium. This particular phenomenon has been helpfully described as a "intermedial reference of form" ("intermediales Formzitat")[24] and is used to analyze phenomena like the so-called 'filmic writing' in novels. Or to put it in Joachim Paech's words: "There is no intermediality between literature and film; there is one only between media narrating literarily or cinematically".[25] This is also where trans-

17 Genette, Gérard: *Narrative Discourse: An Essay in Method*, Ithaca: Cornell University Press 1990.

18 Genette, Gérard: *Palimpsests: Literature in the Second Degree*, Lincoln: University of Nebraska Press 1997.

19 Saint-Gelais, Richard: "Transfictionality," in: David Herman (ed.), *Routledge Encyclopedia of Narrative Theory*, London: Routledge 2010.

20 Wolf, Werner: "Intermediality Revisited. Reflections on Word and Music Relations in the Context of a General Typology of Intermediality," in: Suzanne M. Lodato (ed.), *Word and Music Studies: Essays in Honor of Steven Paul Scher and on Cultural Identity and the Musical Stage, Word and Music Studies* 4, Amsterdam: Rodopi 2002.

21 Schröter, Jens: "Intermedialität. Facetten nnd Probleme eines aktuellen medienwissenschaftlichen Begriffs," in: *Montage AV* 7/2 (1998), accessed October 1, 2017.

22 Rajewsky, Irina O.: "Intermediality, Intertextuality, and Remediation: A Literary Perspective on Intermediality," *Intermédialités: Histoire et théorie des arts, des lettres et des techniques* 6 (2005).

23 Leschke, Rainer: *Einführung in die Medientheorie*, Munich: Fink 2003, pp. 306-316.

24 Böhn, Andreas (ed.): *Formzitat und Intermedialität*, St. Ingbert: Röhrig Univ.-Verl. 2003.

25 Paech, Joachim: "Paradoxien der Auflösnng und Intermedialität," in: Wolfgang Coy and Martin Warnke (eds.), *HyperKult: Geschichte, Theorie und Kontext digitaler Medien*, Nexus 4, Basel: Stroemfeld 1997, p. 335.

medial approaches fall short. Or to put in other words: If intermediality is taken as a concept to describe medial imitations, emerging medial combinations, and new medial formations,[26] it is used to examine medial references *within* technical medial borders—formal elements which seem to belong to a film, a book, a videogame, and so on. Transmediality, on the other hand, would look at phenomena which go *beyond* medial borders—characters, narratives, worlds, but also formal elements which are not specific to a single medium, for example the representation of subjectivity.[27] Both concepts are thereby closely related to each other but can be differentiated for the sake of analysis. And finally, there is also one pragmatic reason to use the notion of transmediality to discuss phenomena which transcend the borders of their technical or material representational medium: it has gained acceptance in the international community of English-speaking media scholars—something which, if I am not mistaken, intermediality has not.

2. TRANSMEDIALITY AND GAMES

As mentioned above, the notion of transmediality with a relation to video games can be found in the realm of media and communication studies since the early 1990s. In her ambitious interdisciplinary book *Playing with Power in Movies, Television, and Video Games*, Marsha Kinder shows how commercial "transmedia supersystems"[28]—large entertainment franchises which use a wide range of channels to disperse their content—operate to reach out to children in order to tie them to certain narrative brands. Kinder's expanded notion of "transmedia intertextuality"[29] broadens the scope of academic study, while scholars like Gerard Genette only considered classic works of literature for their transtextual studies (e.g. *The Odyssey*, *Don Quixote*, or *Robinson Crusoe*), Kinder's *Playing with Power* opens up the field to non-literal media texts as well—such as *Karate Kid*, *Slimer and the Real Ghostbusters*, and *Teenage Mutant Ninja Turtles*.

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26 Rajewsky: "Intermediality, Intertextuality, and Remediation: A Literary Perspective on Intermediality," pp. 51-52.

27 Thon, Jan-Noël: "Subjectivity across Media: On Transmedial Strategies of Subjective Representation in Contemporary Feature Films, Graphic Novels, and Computer Games," in: Marie-Laure Ryan/Jan-Noël Thon (eds.), *Storyworlds Across Media*, pp. 67-102.

28 M. Kinder: *Playing with Power in Movies, Television, and Video Games*, p. 122.

29 Ibid., p. 39.

Though Kinder does acknowledge potential cognitive benefits from playing games, her perspective is still heavily influenced by something Dena once called a "commodification lens":[30] the consideration of games as mere advertisement for further forms of merchandise. Taken the diverse and manifold developments of video games today into account, this view may be put in question again.

This is also something Henry Jenkins emphasized a couple of years later when he shed a more optimistic light on the matter. In a *Technology Review* article in 2003, Jenkins described how "transmedia storytelling"—done the 'right way'—could prove itself with a narrative surplus.[31] Telling a story across media, writes Jenkins, is more than "printing a *Star Trek*-Logo on so many widgets,"[32] but could also be an "enhancement of the creative process" and establish a "more complex, more sophisticated, more rewarding mode of narrative."[33] In 2006, Jenkins elaborated on that thought by showing the close connections between the plot of the film THE MATRIX RELOADED[34] and the video game ENTER THE MATRIX[35].[36] According to Jenkins, the game does not try to retell the story of the film, but rather extends its narrative framework and thereby builds upon its *world*—ideally, always along the lines of the rule "each new text makes a distinctive and valuable contribution to the whole."[37]

At least in this chapter, Jenkins remains relatively vague about the idea of world building. Nevertheless, he illustrates how certain video games can indeed enrich the transmedial storyworld of THE MATRIX. In ENTER THE MATRIX, the players take over the role of two minor characters from the film and, due to their actions, they set the course for certain events that happen in the movie THE MATRIX RELOADED,[38] fill up narrative blanks and find answers to questions that remained open in the film. Especially when it comes to licensed games, which traditionally suffer from a bad reputation both among critics and their respective target audience, such a concept seems to offer an appealing perspective. Howev-

30 C. Dena: *Transmedia Practice*, p. 28.

31 Jenkins, Henry: "Convergence?: I Diverge!," *Technology Review*, 2003, http://www.technologyreview.com/article/401042/convergence-i-diverge

32 Ibid.

33 Ibid.

34 THE MATRIX (USA/AU 2003, D: The Wachowsky Sisters)

35 ENTER THE MATRIX (Atari 2003, O: Shiny Entertainment)

36 H. Jenkins: *Convergence Culture*, pp. 126-128.

37 Ibid., p. 98.

38 THE MATRIX RELOADED (USA/AU 1999, D: The Wachowsky Sisters)

er, Jenkins' examinations lead to the conclusion that the bigger narrative picture of the transmedial MATRIX franchise turned out to be a "flawed experiment"[39] rather than an artistic and commercial success. And, indeed, a large-scale 'transmedia storytelling'-project seems to be problematic for several reasons—both in regard to production and reception aesthetics.

Judging from a production aesthetic perspective, such game adaptations (or expansions) often suffer from the involvement of 'too many cooks':[40] the development and production processes of a film and a game are hardly compatible from a logistic standpoint because the average development time of a game is much longer than that of a film production. The film's screenplay may change on a very short notice or improvisations may take place during the final shooting; spontaneous developments are hard to adapt to the medium of the game. Finally, the approval process for developing games has to include not only the hierarchy of the studio and publisher, but also that of the license holder and the film production team.[41] The result is often a "self-defeating project"[42] in which different production teams may even focus on different target audiences and thereby give rise to inconsistencies: "the different goals of the various license-sharers stand in direct conflict, even contradiction, to each other, so that not only do they sacrifice consistency and continuity, they effectively achieve negative synergy, as each product antagonizes the contrasting audience."[43]

However, even *if* the development of a game is placed within a working time schedule with another medium like a film or a television show, there are many other important aspects to consider for transmedial storytelling projects. Many of them deal with the role of the reader of the transmedial story. David Bordwell, for example, points out that most projects trying to tell a story across media have to face the question of how to make sure that the audience gets the right narrative information at the right time in order to form a coherent chain of events.[44] Because the medial framing of a story breaks away once a narrative is continued from a film to a medium like a game, it may become hard to specify for a viewer—who is not necessarily keen to playing a game, reading a comic or watching

39 Ibid., p. 99.

40 T. Elkington:"Too Many Cooks".

41 Ibid., p. 226.

42 Ibid., p. 218.

43 Ibid., pp. 218-219.

44 Bordwell, David: "Now Leaving from Platform 1," http://www.davidbordwell.net /blog/2009/08/19/now-leaving-from-platform-1/

a webisode in the first place—which information is relevant at a certain moment in time, dismissing a sense of narrative orientation. A solution to that problem (and the problems Elkington describes) could be to rely simply on productions of prequel games to other narratives, i.e., games which tell a story that happened *before* an already produced narrative. Indeed, many examples (like the three games discussed briefly below, but also Elkington's case study ESCAPE FROM BUTCHER BAY[45] show that this is exactly the case with many licensed games.

Going beyond the specifics of a transmedial *story* alone, there is finally the much broader question of how audience members actually engage with a medium when it is framed by built-in expectations from another medium. This question begins with a discussion of the effects of paratexts[46] and was elaborated from a philosophical and psychological perspective by Jens Eder in his German article *Transmediale Imagination*.[47] Considering games, this issue is also echoed, for example, in Elizabeth Evans' and Jason Mittell's texts about the transmedial TV series SPOOKS[48] and LOST.[49] Evans empirical research suggests that the mini games which were published in a sort of companion application for the *Spooks* show are perceived as way too simple to match the narrative complexity of the show.[50]

45 ESCAPE FROM BUTCHER BAY (Vivendi Universal Games 2004, ●: Staarbreeze Studios)

46 Gray, Jonathan: *Show Sold Separately: Promos, Spoilers, and Other Media Paratexts*, New York: NY University Press 2010.

47 Eder, Jens: "Transmediale Imagination," in: Julian Hanich/Hans J. Wulff (eds.), *Auslassen, Andeuten, Auffüllen: Der Film und die Imagination des Zuschauers*, Munich: Wilhelm Fink 2012, pp. 207-238.

48 SPOOKS (UK 2002-2011, BBC)

49 LOST (USA 2004-2010, ABC)

50 Compared to Mittell's findings, speaking of a discrepancy between the complexity of TV-series and game seems to be a rather mild way of putting it. He describes how the fan-community of *Lost* felt like they had gotten a "slap in the face" ("Strategies of Storytelling on Transmedia Television" , in: Marie-Laure Ryan/Jan-Noël Thon (eds.), *Storyworlds Across Media*, p. 226) when they were confronted with the fact that the effort they put into the complicated ARG game THE LOST EXPERIENCE turned out not to be rewarded with a key piece of narrative information—as has been suggested by the producers—but deemed to be a waste of time and energy instead. Again, this is not so much a problem of the inherent different aesthetics of distinctive media, but more

Evans' descriptions point to another approach, which plays a central role for the analysis of transmedial games: a media-specific—that is, a ludic—approach. Video games are, as it is rightfully claimed by numerous articles in the field of Game Studies, not simply machines to tell stories at the push of a button, but also rule-based systems which are able to simulate certain processes and offer their users the possibility of a certain degree of interactivity. Narrative elements, but also iconicity and sound, are without a doubt of great importance when we create or complement mental models of storyworlds. This happens every time we engage with a narrative or otherwise representational artefact. But it is still the ludic quality of games that arguably has the biggest impact on how we experience a game. According to this understanding, a video game is not so much a device that mediates narrative information, but rather one that mediates experiences that are not completely predetermined by an authorial figure, as the player possesses the agency to make nontrivial decisions.[51] As Evans' findings suggest, this difference between the narrative representations in a novel, a film or a TV-series in opposition to the narrative representation in a game—and the expectations of the former informing the latter—often results in a rupture leading to frustration or even the rejection of a game in question. So, when we enter a transmedial world by the means of a game, we tend to look for certain elements of this world that make us feel familiar with the elements evoked by its originating medium. Those elements can be further categorized—as it has been done by

an issue of misguided user management, false suggestions, and an impression of 'broken promises' made by the producers.

51 According to the narratologists Martínez and Scheffel: *Einführung in die Erzähltheorie*. C. H. Beck Studium, Munich: Beck 2012, we engage in narrative texts always under the impression of a "double perspective of time"; (123) both knowing that the events we encounter in the narration are already determined, but at the same time experiencing these events as if they unfolded in the very moment of our reading. As stated by Thon (Thon, Jan-Noël. "Schauplätze und Ereignisse: Über Erzähltechniken im Computerspiel des 21. Jahrhunderts," in: Corinna Müller/Irina Scheidgen (eds.), *Mediale Ordnungen: Erzählen, Archivieren, Beschreiben*. Schriftenreihe der Gesellschaft für Medienwissenschaft 15. Marburg: Schüren 2007, p. 41) this is also a quality which is fundamentally different in games. Even though we do engage in predetermined narrative elements from time to time in games (e.g. cutscenes and embedded narrative elements like documents and audio logs), the actual development of the game play passages is (within the limits of the game engine and other design factors) up to us.

Ryan[52] and Klastrup and Tosca[53]—but these taxonomies don't tell much about how the ludic elements of a game may actually contribute to the qualities of an already existing world that is loaded with certain expectations. This observation raises one significant question: if video games can be considered as rule-based systems that do not lend themselves easily to a harmonic kind of *narrative* convergence with other media, what kind of *ludic*, rule-based simulation may be implemented successfully into a larger transmedial world?

3. PLAYING IN A WORLD OF ORCS, ALIENS AND ZOMBIES

To answer this question, it is helpful to take a look at some case studies. Indeed, several games published recently exemplify how different game mechanics contribute to a transmedial world which has been introduced by predetermined narrative media.

The first one is SHADOW OF MORDOR,[54] a prequel to THE LORD OF THE RINGS film franchise by Peter Jackson. It is not only a departure from the basic pattern of its hack'n'slay video game predecessors,[55] but also complements an open world scenario with the simulation of a hierarchical army system. The player takes on the role of the ranger Talion, whose body and mind blend with the spirit of the elven black smith Celebrimbor. In terms of narrative, Talion's tale is a classic revenge story that focuses on events set before the ones in Peter Jackson's film adaptations and highlights their darker and bloodier themes. In the open world of the game, the player encounters numerous orcs who belong to the army of the villain Sauron; these orcs march, patrol, talk at camp fires about recent events, guard slaves, and have hierarchical disputes. By means of these

52 Ryan, Marie-Laure: "Story/Worlds/Media: Tuning the Instruments of a Media-Conscious Narratology," in: Marie-Laure Ryan/Jan-Noël Thon (eds.), *Storyworlds Across Media*, pp. 34-37.

53 L. Klastrup/S. Tosca: "Transmedial Worlds: Rethinking Cyberworld Design."

54 MIDDLE-EARTH: SHADOW OF MORDOR (Warner Brothers Interactive Entertainment 2014, O: Monolith)

55 Storm Front Studios / Electronic Arts and WXP Games / Black Label Games, both 2002 and both discussed by Brookey, Robert Alan: *Hollywood Gamers: Digital Convergence in the Film and Video Game Industries*, Bloomington: Indiana University Press 2010, pp. 30-48.

activities (which seem to happen independently of the player's behavior), the game creates the illusion of the autonomy of the creatures that inhabit the land. But these activities are not just a mere aesthetical gimmick, as they are further deepened by the game mechanics. The network of Sauron's troops is held together by a system, in which randomly chosen orcs partake in events like public executions, duels, or hunts, and become stronger and more resistant every time they succeed. If the player loses a fight against the orcs, they will remember the encounter and taunt the player the next time they meet—becoming even tougher after each victory. Especially in the beginning of the game, in which Talion's skills are not well developed and stronger orcs still represent a challenging obstacle, this system pays off emotionally: a random enemy from the masses of orcs can become an arch nemesis, whose successful execution will be accompanied by an all the more satisfactory feeling of accomplishment. This "Nemesis System," as it is called by the developers of the game, functions as a significant motivating factor while playfully infiltrating Sauron's army by eliminating (and, later, mind controlling) certain orcs in key positions, adapting one's playing style to take advantage over weaknesses of individual orcs and working one's way up to the higher ranks of enemies.

While SHADOW OF MORDOR gives the player the possibility to explore a seemingly vivid world of combatants in which he or she becomes steadily more and more powerful, another game in a different transmedial franchise goes the opposite way. In ALIEN: ISOLATION,[56] players take on the role of Amanda Ripley, the daughter of Ellen Ripley, the protagonist in the first four movies of the popular ALIEN-franchise. Remarkably, the game is both a passionate love letter to the retro futurism of Ron Cobbs' set design for Ridley Scott's first ALIEN film from 1979 and a re-creation of the claustrophobic tension and sense of dread of the film through means of game play. Instead of serving as a potential (male) power fantasy, i.e. controlling an almost unstoppable avatar (as is the case in SHADOW OF MORDOR by the end of the game), ALIEN: ISOLATION puts the player in the shoes of a female protagonist who can, due to her intelligence and craftsmanship, cope with her hostile environment of an abandoned space station, but quickly faces an overly powerful (and in fact invulnerable) enemy: the eponymous alien creature. During the main part of the game, the alien acts as the only, but nevertheless serious, threat on the station, with direct encounters leading inevitably to the player's death. What is interesting in terms of game mechanics is the fact that the alien does not (only) appear in scripted sequences, but also

56 ALIEN: ISOLATION (Sega 2014, ●: Creative Assembly)

stalks the player in procedurally generated movements throughout the corridors of the space station, emerges surprisingly from air ducts, and lurks on ceilings waiting for the player to appear. This makes anticipating the alien's moves practically impossible. To stay alive it is necessary to keep a steady eye on the motion tracker which emits anxiety-inducing beeps when it detects nearby movements. Over long periods of time, the player ends up hiding in closets and under tables to avoid the alien, and takes long detours to reach certain goals while staying out of range of the creature. Due to the persistent menace, the player quickly adapts to the feeling of constant danger, which constitutes not only an endurance test for the player's nerves, but also a very exhausting experience because of the game's slow pacing, the steady interruptions through hiding, and the constant need to pay attention to the slightest sign of threat.

Even though both examples shown here manage to capture a feeling of what it is like to be in the storyworld by embracing a "unique 'empirical' approach"[57] through game play—by using empowerment-strategies in SHADOW OF MORDOR and by using disempowerment-strategies in ALIEN: ISOLATION—it is remarkable that both games fail to incorporate convincing story elements. That a seamless kind of convergence between narrative and game elements is far from achieved can be shown by highlighting how ALIEN: ISOLATION presents Amanda Ripley's personal tale. From a narrative perspective, the game is interested in 'closure,' which is explicitly articulated in the dialogue during the very first cut-scene. But this emotional closure is never quite accomplished—which may be attributed to the fact that the mechanics stand in the way of the narrative and don't allow it to develop. To give an example: By the end of the game there is a cut-scene, in which the protagonist unlocks an audio log which deals with the whereabouts of Amanda's mother Ripley and her emotional struggle. The rendition of the file itself is without a doubt dramatic and compelling, but nevertheless does not fit into the course of the game. As Chris Franklin notes in his commentary about the game:

"The game also drops the missing mom plot for ten hours of gameplay only to tersely resolve it in what amounts to a glorified audio log by Sigourney Weaver as Ellen Ripley. And since the game tries to keep the first person unbroken except for the beginning and

57 Baumgartner, Robert: "'In the Grim Darkness of the Far Future there is Only War': Warhammer 40,000, Transmedial Ludology, and the Issues of Change and Stasis in Transmedial Storyworlds," in: *IMAGE | Issue 22 | Special Issue Media Convergence and Transmedial Worlds (Part 3) | 07/2015*, p. 38.

end, we don't even see her react. Then, instead of a quiet character moment with Amanda to at least sell her side that rather limp attempt at wrapping things up, it's right back to goofy videogame action where a nuclear reactor that looks as ridiculous as the one in Spider-Man 2 is about to explode!"[58]

Keeping a balance between the narrative and ludic elements of a game is without question a delicate design problem. But, as a quick look at a third case study may show, a focus on the narrative side may offer a successful involvement of the player through means of game play as well.

The developer Telltale Games focuses mainly on the production of episodic point-and-click adventures by using the licenses of prominent entertainment properties (film franchises like JURASSIC PARK, BACK TO THE FUTURE, and Comic and TV series like GAME OF THRONES, THE WALKING DEAD, FABLES, and BATMAN). All those games draw on the same basic formula which is adapted to the bigger back story, the genre conventions, and the specifics of the narrative tone of the storyworld in question. Before the games start, a text insert is usually shown: "This game series adapts to the choices you make. The story is tailored by how you play." What follows are games, in which the exploration of the game world is reduced to a minimum while the players' main concern is making decisions about character and plot developments by clicking on text boxes. Like in an ever-progressing tree diagram, the players control their avatars and interact with non-playable characters that remember certain decisions made by the player. Apart from conversations that force the player to take a stance concerning certain situations and events, things also become regularly physical by engaging in fights or interrogations, in which drastic or moderate means can be applied,[59] or in facing moral dilemmas in post-apocalyptic environments that can decide over life and death.[60] Typically, each decision is judged by the other characters who tend to comment on the player's behavior accordingly. Thus, these games develop the "rudimentary performative traits"[61] of embracing a certain role for which the player is responsible.

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58 Franklin, Chris: "Alien: Isolation," accessed January 10, 2017, http://www.errantsignal.com/blog/?p=711

59 THE WOLF AMONG US (Telltale Games 2013-2014, ●: Telltale Games)

60 THE WALKING DEAD: SEASON ONE (Telltale Games 2012, ●: Telltale Games)

61 Rauscher, Andreas: "Filmische Spielräume—Genre-Settings in Videospielen," in: Benjamin Beil/Marc Bonner/Thomas Hensel (eds.), *Computer|Spiel|Bilder*, Glückstadt: Hülsbusch 2014, p. 189.

According to Espen Aarseth, such possibilities of choice are a basic quality that separates games from other medial forms with narrative content. But Aarseth insists that those choices are far from equal. When you play games like THE WOLF AMONG US or THE WALKING DEAD it is hard to miss the fact that most parts of the story actually develop along predetermined, fixed tracks which almost always lead to certain unchangeable dramatic key points and whose outcomes differ only in nuances. Even if those choices seem to be central to the gameplay of these games, it would be hard—at least according to Aarseth—to count them as 'real' decisions:

"If the choices presented to the player are so limited that they clearly seem to lead the action in one unavoidable direction, they become quasi-choices, and the game becomes a quasi-game. Or to use a less loaded phrase: the story disguises itself as a game, using the game technology to tell itself. An example of this are the 'game books', often called Choose Your Own Adventures, detective fiction text games in which simple tree structures are navigated by the user/reader/ player. In these games, like the early computer adventure games, a dominant plot is 'discovered' by the reader, but in reality it has been there all along. These games are not about choice but about rediscovering the one acceptable path."[62]

By keeping the narrative framework of the game actually unchangeable, Telltale's games seem to validate Aarseth's point (and thus, the creators' message at the beginning of the game appears to be a straight out lie). Nevertheless, the absence of elaborate mechanics has no crucial effect on the emotional experience the player gains from the unfolding events. This is mainly due to the level on which those alleged "quasi-choices" are sought. Concerning the plot (as a chain of events), Aarseth may have a point, but that does not necessarily apply to the role of the characters. This is the main level where the importance of choices comes into play. In other words, these games are not so much about letting the player experience a story that is entirely in accordance with his/her tastes and individual desires, but much more about acting within a social or moral key position and—if not to shape—to gradually color the narrative progress more satisfactorily and more personally. The special quality of these decisions is mainly due to the fact that the characters the players encounter—like the orcs in SHAD-

62 Aarseth, Espen: "Quest Games as Post-Narrative Discourse," in: Marie-Laure Ryan (ed.), *Narrative Across Media: The Languages of Storytelling*, Lincoln: Univ. of Nebraska Press 2004, p. 366.

OW OF MORDOR—are equipped with a virtual memory and do not miss any opportunity to remind the players of questionable actions.

This is especially effective in the first season of THE WALKING DEAD, where the player acts as a kind of father figure for the 8-year-old girl Clementine, who lost her parents after the outbreak of the zombie apocalypse. Clementine is now in the care of the player's avatar Lee, a former history professor, and it is his/her responsibility to protect her without surrendering to the challenges of the life-threatening environment. Through the player's decisions, Clementine becomes a projection screen of Lee's conscience and the moral compass of the player's behavior. This becomes particularly drastic when Lee is bitten by a zombie in the penultimate episode of the game—a predetermined, unavoidable event—and finally, in the final scenes of the game, when he has to let go of Clementine. The responses of players in highly emotional and tearful Let's Play recordings on YouTube prove that THE WALKING DEAD knows how to convince its audience not only with its rather unusual coming-of-age story with a zombie twist and an unfortunate end, but more importantly, that player decisions have a substantial impact on the playing experience that should not be underestimated. In this way, the adventure game comes very close to a theme that is always in the forefront of different variations of the adapted comic series—the responsibility towards other people and especially loved ones in the struggle for survival—but even surpasses it with the means of the video game medium in terms of emotional involvement.

4. CONCLUSIONS

Although in all three presented case studies there are intertextual as well as intermedial references unquestionably at play—for example, in the form of narrative references to former comics and as adaptations of certain genre conventions—the three examples shown here illustrate that the term transmediality in connection with video games can be considered as a productive category to become aware of certain (aesthetic) media specifics. As prequels to their core texts, all games fit effortlessly into Jenkins' concept of transmedia storytelling, but also offer qualities that set them apart from their purely narrative content. Their function is richer than merely providing story pieces. The games go beyond their narrative elements by concentrating on the strengths of the medium by embracing specific ludic qualities. Thus, the players are not only given the opportunity to take another *look* at a well-known storyworld through another media window, but to enter it, explore it, act in it, and to make decisions in it (and be held accountable for them). The process of dispersing content across a variety of media

platforms is thus not only a further means within the value chain of the marketing logic of large Hollywood franchises, but something that can indeed make a unique contribution to the establishment and expansion of a larger transmedial storyworld which is constructed within our mind.

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A Game of Playful Art

Transmedia Auteurs, Genre Settings, and the Cineludic Form

ANDREAS RAUSCHER

The discussion of video games' artistic potential is caught in a standoff situation. On the one hand video games have become multi-million dollar franchises that have surpassed the receipts of most Hollywood blockbusters. Games related to films and comic books like the *Batman: Arkham Asylum* series, the successful LEGO games based on LORD OF THE RINGS, STAR WARS and THE AVENGERS or the Telltale adventure game spin-offs to TV series like THE WALKING DEAD and GAME OF THRONES are no longer restricted to simple merchandise, but have become self-contained contributions to larger patchworks of transmedia story- and gameworlds. The idea of transmedia storytelling, defined by media scholar Henry Jenkins as a concept of participatory culture in the age of media convergence,[1] has become a common point of reference in academia as well as in the games industry. Video games are no longer restricted to a niche culture, they have become mainstream and an important asset for entertainment conglomerates.

On the other hand, video games have gained cultural recognition by being displayed at museums, art galleries, and festivals. In 2012, they were integrated into the permanent collection of the New York Museum of Modern Art and the Smithsonian Museum at Washington D.C. presented the exhibition *The Art of Video Games*.[2] The Computerspiele Museum at Berlin which reopened in 2011 has become an internationally renowned institution hosting an impressive ar-

1 Jenkins, Henry: *Convergence Culture. Where Old and New Media Collide*, New York: New York University Press 2006.

2 Melissinos, Chris/O'Rourke, Patrick: *The Art of the Video Game*, New York: Welcome Books 2012.

chive of video games; the German Film Museum at Frankfurt presented a special exhibition on *Film & Games—Interactions* in 2015;[3] and the Museum for Fine, Applied and Decorative Arts at Hamburg displayed the exhibition *Game Masters* in 2016 that featured a variety of historically organized games and documented the artistic influence of their designers.

Video games are at the crossroads between commercial franchises that provide remarkable production values but also the danger of standardization and cultural elevation by separating video games from their original dynamic contexts by putting them in the museum.

The following article tries to connect the discussion of video games as an art form to the broader frame of transmedia phenomena employed by Henry Jenkins. It will outline three perspectives that expand the rather plot-orientated terminology of transmedia storytelling and combine the discourse on participatory culture to methods from film studies, genre theory, and cultural studies. Instead of reaching for a more complete understanding of a holistic "unified and coordinated entertainment experience [to which] each medium makes its own unique contribution to the unfolding of the story"[4] the following three perspectives take into account the notions of auteur, genre setting, and mental mapping as building blocks for a playful perspective in transmedia enterprises. It builds upon the idea of dynamic kernels and satellites within a transmedia enterprise as a modular alternative to additive comprehension of an imaginary whole. Seymour Chatman defined kernels as "nodes or hinges in the structure, branching points which force a movement into one of two (or more) possible paths… Kernels cannot be deleted without destroying the narrative logic."[5] According to Chatman satellites provide "a minor plot event […] not crucial in this sense. It can be deleted without disturbing the logic of the plot, though its omission will, of course, impoverish the narrative aesthetically."[6] In contrast to Chatman's structural model this analysis considers kernels and satellites to be variables that can change in status and meaning according to historical processes and shifts in popular taste. They turn into elements of play instead of being bound to a linear narrative or fixed

3 Deutsches Filminstitut (DIF)/Lenhardt, Eva/Rauscher, Andreas: *Film & Games. Interactions*, Berlin: Bertz Verlag 2015.

4 Jenkins, Henry: "Transmedia Storytelling 101," in: *Confessions of an Aca/Fan-Blog*, 22.03.2007, http://henryjenkins.org/2007/03/transmedia_storytelling_101.html

5 Chatman, Seymour: *Story and Discourse. Narrative Structure in Fiction and Film*, London: Cornell University Press 1978, pp. 54

6 Ibid.

rules. In his study *Play Matters* game scholar Miguel Sicart defines playfulness as "a way of engaging with particular contexts and objects that is similar to play but respects the purposes and goals of that object or context."[7] The larger frame of the fictional universe remains intact but the focus of attention can be shifted from a closed self-contained set to an open-ended game. The author is not really dead but his or her work comes closer to the task of a game master.

TRANSMEDIA AUTEURS AS GAME MASTERS

For the past few decades the study of literature has been quite busy arguing about the death of the author proclaimed by French philosopher and cultural critic Roland Barthes.[8] Instead of guessing what the author could have intended, the focus shifted towards the structure of the text interpreted by the reader. But among cinephiles with European art house cinema and the individualistic styles propagated by New Hollywood, the idea of the director as an artistic authority reached the height of its popularity just as the author of the novel was disempowered. This contrasting development indicates an interesting difference in regard to the meaning of the author dependent on each medium. In film studies and among cineastes auteurism can also be understood as a subversive idea and a secret alliance between the director and the audience in advocating challenging artistic ideas against the plain commercial interests of the studios and accountants.

American critic Andrew Sarris picked up the idea of the politique des auteurs that originally was only a strategy to give more artistic credibility to the creators of innovative films and turned it into auteur theory.[9] He named three paradigms that differentiate the work of an auteur from routine work: technical competence, the distinguishable personality of the director and the interior meaning that is created from the tension between the director's personality and his or her material.[10]

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7 Sicart, Miguel: *Play Matters,* Cambridge, Mass.: MIT Press 2014.

8 Barthes, Roland: *The Pleasure of the Text,* New York: Hill and Wang 1975.

9 Sarris, Andrew: "Notes on the Auteur Theory in 1962," in: Gerald Mast/Marshall Cohen/Leo Braudy (eds.), *Film Theory and Criticism,* 4th Edition, Oxford: Oxford University Press 1992, pp. 585-588.

10 Ibid., p. 586.

Quite obviously, these paradigms are fulfilled by artists like Peter Greenaway whose work as a director is placed within a larger structure of works of fine art on display at several international exhibitions. He is a fierce advocator of the emancipation from narrative (almost as if he wants to adapt the rather radical positions of early ludology) to questions of the image that he considers to be too often subordinated to the conventions of narrative cinema. In his project THE TULSE LUPER SUITCASES he combined three films following the fragmentary trace of the protagonist through several pivotal points of the history of the 20th century. There are 92 suitcases which include hints concerning the mysterious journey of Tulse Luper. They were displayed at several art exhibitions designed by Greenaway and you could also participate in an online game that featured several mini-games, some reminiscent of graphic adventure games in examining objects under a microscope and others that looked like a psycho-analytical version of PAC-MAN presenting an avatar escaping from teddy bears in a subterranean area. THE TULSE LUPER SUITCASES is an interesting example how the idea of the auteur as game master can be turned into a transmedia art project. He or she constructs a technically competent set-up that refers to a certain aesthetic and topic associated with the director. The struggle between personality and the material is open-ended and delegated to the audience who participate in the playful game of art. In the case of Greenaway's project, those who played the online game on the website accompanying the project took part in a competition. The winner got to travel to different locations of the non-linear 20th century odyssey. With no clear center of the artistic activities, but several parallel starting points like the films, the website, and the exhibition, THE TULSE LUPER PROJECT was similar to an Alternate-Reality-Game (ARG) with the audience choosing their preferred point-of-entry that became the kernel to their explorative activities.

The best-known examples of ARGs have been used to promote films like A.I.: ARTIFICIAL INTELLIGENCE or THE DARK KNIGHT and TV series like LOST by spreading information across several media channels. By the power of collective intelligence, those hints were put together resulting in the release of a new trailer, a special cake, a souvenir water bottle or pieces of background story. Greenaway's high-brow scavenger hunt employed similar mechanics resulting in an auteurist experience reflecting the turbulence of the modern era through the prism of postmodernism and transmedia. Even though THE TULSE LUPER PROJECT did not receive the attention from critics and audience it deserved, it provides an instructive pattern for navigating transmedia psychogeography from an auteurist perspective.

If you take a second look at the commercial ARGs mentioned above it is probably no coincidence that they were accompanying films by Steven Spielberg

and Christopher Nolan as well as a series co-created and produced by J.J. Abrams, directors associated with a style of their own as well as ludic structures.

Figure 1: Greenaway—Tulse Luper Website Screenshot

Source: tulseluperjourney.com/about.jsp

Nolan occupies a kind of middle ground between Greenaway's high postmodernism and what could be called the auteurs of the cineludic form. His neo-noir MEMENTO provides one of the prototypes of what film and media scholar Thomas Elsaesser calls the mind-game movie.[11] The unreliable perception of the narrative works like a puzzle. In rather mainstream films like THE USUAL SUSPECTS and THE SIXTH SENSE, at least on first viewing, the film ends with a surprising twist. In more art house-orientated films, like in David Lynch's LOST HIGHWAY, in the end one important piece of the puzzle is still missing in order to provide a multitude of possible interpretations. MEMENTO just like THE GAME and FIGHT CLUB by David Fincher is located between these two variations. On the one hand there are enough references to genre conventions to construct a logical solution

11 Elsaesser, Thomas: "The Mind-Game Film," in: Warren Buckland (ed.), *Puzzle Films: Complex Storytelling in Contemporary Cinema*, Oxford: Wiley-Blackwell 2008, ch.1.

to the mind-game, but on the other hand there is still enough space for interpreting the game as a metaphor for something else. In MEMENTO you can decipher the mechanics the protagonist employs to get over the loss of his short-term memory but you never really know if the events around the mysterious Sammy Jankis are reliable or not, it remains open for playful readings.

Another approach for the ludification of cinema quite different from negotiating interpretations lies in the creation of a game-like mise-en-scène resulting in cineludic forms. The auteurs of the cineludic form from Spielberg and George Lucas to J.J. Abrams and Joss Whedon integrate ludic scenarios into their films that can be extended in video games and occasionally even create feedback loops that influence films like THE AVENGERS by Joss Whedon. The first Marvel studio annual works outing includes a show down that is structured exactly the same way as the arcade space shooters inspired by GALAGA referenced earlier in the film.

Figure 2: J.J. Abrams—S. 2013

Source: Amazon.com

Whedon continues a tradition that started with Spielberg and Lucas. The adventure game based upon their film INDIANA JONES AND THE LAST CRUSADE counts among the few film adaptations that offer an interesting and original ludic expe-

rience. It does not simply retell the story of the film but provides an ironic take on its events by enabling alternative problem solutions unimaginable in the movie like fooling the Nazis by posing as a salesman for fashionable leather jackets. J.J. Abrams picks up the tradition and themes established by Spielberg and Lucas not only on an aesthetic and narrative level with films like SUPER 8 and, quite obviously, STAR WARS VII—THE FORCE AWAKENS, but also in regard to ludic approaches towards his material. His novel *S.* continues the tradition of self-reflexive postmodern novels and at the same time it looks like the print edition of a graphic adventure game from the 1980s that could have been produced by LucasArts, the game studio established by George Lucas. It features a vast number of gimmicks, from reprinted postcards and newspaper excerpts to a decoding disc that are required in deciphering the mystery of the book *Ship of Theseus*, written by fictional novelist V.M. Straka, which looks as if it has been stolen from a public library.

In contrast to Greenaway who constructs a transmedia experience adhering to the principles of classical avant-garde, the playful art created by Spielberg, Lucas, Whedon, and Abrams aims for a more popular area that has been discussed by the hands-on approach of American pragmatist cultural critics from Gilbert Seldes to Henry Jenkins. The artistic vision of the auteurs is already close to an adventure playground that rather invites the audience to explore the dynamics of post-classical cinema than to remain seated and reflect upon the fragmentary perception of modernity.

The work of Spielberg, Lucas, Whedon, and Abrams is paradigmatic for the creation and differentiation of cineludic forms. They have a distinguished personal style in their innovative attitude towards genre variations and demonstrate technical competence in their handling of mise-en-scène, sound design, and editing. At the same time, they also try to achieve a more contemporary version of stock scenes from the days of classical Hollywood, like the duel as an innovative retro-futurist lightsabre fights from the STAR WARS films or breathtaking cliffhanger situations and escapes as featured in the mine car chase from INDIANA JONES AND THE TEMPLE OF DOOM. Abrams and Whedon in turn update the stock scenes created a generation ago by Lucas and Spielberg.

Their films provide templates that are perfectly suited to be adapted to video game level design. For example the opening sequence from Steven Spielberg's RAIDERS OF THE LOST ARK in which Indiana Jones has to solve puzzles and avoid pitfalls in a series of gradually more demanding challenges has inspired a huge variety of action-adventure games, from PRINCE OF PERSIA to TOMB RAIDER. If Lara Croft takes a golden idol from a pedestal she seems to know as well

as the player that you only have a few seconds before the temple raided by the archeologist collapses and a giant boulder comes rolling forth.

GENRE SETTINGS AND CINELUDIC FORMS

The cineludic form can take on a life of its own in defining design patterns for video games. Stock scenes from film genres imply a certain set of rules that inform the possible goals and indicate the challenges encountered around the next corner. Scenes that would be considered tiresome clichés when seen in a film can become an introductory guide to the game scenario and provide an exciting challenge by considering and executing your next move.

Early arcade games like GUNFIGHT as well as SPACE INVADERS and SPY HUNTER refer to situations well-known as standards from traditional genre cinema. Even though GUNFIGHT is closer to *PONG* than to the revisionist epic Western game RED DEAD REDEMPTION, the cowboy outfit and guns are immediately associated with duels in classical Westerns. The spy chase in SPY HUNTER connects with scenarios familiar to generations of international audiences of the JAMES BOND movies since 1962 and it is no surprise that the 1990 game adaptation to THE SPY WHO LOVED ME is rather a SPY HUNTER clone than a ludification of the ironic Roger Moore spy spectacle. You also need no tutorial in SPACE INVADERS to recognize that you have to fight against the invading aliens. In many cases arcade games refer to the established semantic structures of genre cinema. Film historian Rick Altman differentiates between semantic and syntaxic approaches to cinematic genre:

"Genres arise in one or two fundamental ways: either a relatively stable set of semantic givens is developed through syntactic experimentation into a coherent and durable syntax, or an already existing syntax adopts a new set of semantic elements."[12]

Especially the semantic perspective associated with genres like the western, science-fiction, the gangster and the spy film that have established a clearly defined iconography suits the demands of arcade and action games. Altman explains that it does not reveal too much about the narrative structure, but is therefore quite recognizable on a visual level: "While the semantic approach has little explanatory power, it is applicable to a larger number of films. Conversely, the syntactic

12 Altman, Rick: *Film/Genre*, London: BFI Publishing 1999.

approach surrenders broad applicability in turn for the ability to isolate a genre's specific meaning-bearing structures."[13] It would be rather difficult to turn a social melodrama by Douglas Sirk, Rainer Werner Fassbinder, or Todd Haynes into an arcade game without missing crucial elements of the cinematic experience. In contrast iconic sequences from INDIANA JONES AND THE TEMPLE OF DOOM and from Steven Lisberger's pioneering cyberspace-adventure TRON have been successfully adapted into arcade games, because of their reliance on cineludic forms. In TEMPLE OF DOOM Indiana Jones has to save the captive children from the underground mines, cross the pitfalls of the hidden lava temple of the evil Khali cult, and escape in the already mentioned mine car chase. TRON consists of four different games featuring the well-known light-cycle-race based on the game SNAKE, a battle between two tanks, a BREAKOUT-like fight against the evil MCP (Master Control Program) and a fight against electronic spiders that did not make the final cut of the film. TEMPLE OF DOOM and TRON rely on the semantic reference to the genre-coded iconography of the films they are based upon. In their case the syntactic structure appears to be rather secondary to the semiotic codes. The game's structure further underlines this impression. In INDIANA JONES AND THE TEMPLE OF DOOM, after escaping the powers of evil the game starts once again at the entrance to the underground lair surrounding the temple. In the graphic adventure INDIANA JONES AND THE LAST CRUSADE, created about five years later for home computers able to save game states, it would be rather frustrating to return to the beginning after having replayed your own version of the film's plot. In the arcade game closer to a theme park ride it is part of the fun to try another round because it is all about ludic challenge and attractive aesthetic decoration, not about narrative closure. The artistic value of this game design corresponds with the film's stylish rediscovery of the cinema of attraction in regard to the dynamics and the precise rhythmic structure.

Interesting aspects about genre concepts cannot be found in the endless repetition of a fixed formula, but in the creation of new sensations and the sophisticated variation of expectations. The audience can by surprised by narrative twists as demonstrated by the mind-game movies of the 1990s and early 2000s. But it can also be fascinated by the style-conscious integration of new technological devices into the language of cinema, like the lurking danger expressed by the dynamic steadicam camera work in 1970s horror movies or the navigable spaces created by 3rd-engines in video games since the mid-1990s. These varia-

13 Ibid., p. 220.

tions and innovations can result in changes to the syntax associated with genre structures.

Altman remarks about the interplay between the semantic and the syntaxic: "The syntactic expectation, set up by a semantic signal, is matched by a parallel tendency to expect specific syntactic signals to lead to predetermined semantic fields."[14] Games began to develop strategies of montage comparable to the editing process in films. Game adaptations of James Cameron's ALIENS: THE RETURN and Tim Burton's BATMAN combined different game stages and genres in order to represent the film's complete structure. Games like DEFENDER OF THE CROWN, KING OF CHICAGO and IT CAME FROM THE DESERT produced by developer Cinemaware were influenced by tropes from traditional Hollywood genres. DEFENDER OF THE CROWN featured several stages like the raid on a castle, a knight tournament and a sword fight between swashbucklers. You did not need to have a vast knowledge about the tropes of classical Hollywood adventure films to imagine that those game stages were successive steps in the fight for the British crown that could as well outline the plot to an adventure romance starring Douglas Fairbanks or Errol Flynn.

The genre settings referenced in those games imply situations associated with certain syntactic structures. Significant examples for the use of genre settings can be found throughout the survival horror genre. Its founding classic RESIDENT EVIL opens with a riff on the old dark house formula already well-known in 1930s and 1940s gothic horror films and combines them with the zombie threats of modern cinema. But in contrast to George Romero's classic NIGHT OF THE LIVING DEAD and DAWN OF THE DEAD the invasion has already taken place and the zombies lurk inside the deserted country house. The gameplay adapts the feeling of being outnumbered by the enemy crucial to apocalyptic zombie films by limiting ammunition and opportunities to save the game. Navigation is closer to passing through a haunted house on a fairground than to the psychological development of critical modern horror cinema. But it would be a mistake to consider this to be a failure since the artistic achievement of RESIDENT EVIL in the context of game design and genre development lies in updating the genre setting by combining the aesthetic means and creative devices inspired by games as well as cinema. Several years later director Paul W.S. Anderson and Milla Jovovich used the game series as a template to reflect a typical game level structure in the film RESIDENT EVIL: RETRIBUTION.

14 Ibid., p. 225.

Genre settings like those in the RESIDENT EVIL series can accommodate interactions between games and cinema that go beyond the unimaginative translation attempts found in films like DOOM and games like the exchangeable platform games produced by British game developer Ocean in the 1980s adapting stylistically eclectic films like ROBOCOP, TOTAL RECALL, BEVERLY HILLS COP and LETHAL WEAPON in the same one-size-fits-all-template of redundant side-scrolling shooter.

Figure 3: ALIEN: ISOLATION—Screenshots

Source: Sega / Creative Assembly 2014

In his introduction to genre cinema Barry Keith Grant defines the setting as "the physical space and time—where and when a film's story takes place."[15] Game

Figure 4: ALIENS—COLONIAL MARINES—Screen Shots

Source: Gearbox Software / Sega / Electronic Arts 2013

15 Grant, Barry Keith: *Film Genre. From Iconography to Ideology*, London: Wallflower Press 2007.

designer and scholar Richard Dansky adds in the context of game settings: "The setting defines the world that the action of the game takes place in, including character races, languages, laws of physics and metaphysics (do you have spells, blasters, or both?), and pretty much everything else necessary to define the game world."[16]

Games inspired by films can be innovative in translating an experience by finding the adequate gameplay structure for the genre setting. For example the setting in the ALIEN franchise can be applied to the syntax of different genres. Ridley Scott's ALIEN (1979) refers to the old dark house-formula with the alien designed by H.R. Giger lurking in dark corners and narrow corridors amplifying the scary atmosphere. James Cameron's sequel ALIENS: THE RETURN (1986) elaborates on aesthetic elements from the first film's setting by adding an alien queen to the game. But in regard to its syntax it is not structured like a haunted house tale but like an action-orientated war movie.

From a transmedia perspective, the games based on the ALIEN franchise add to the experience of the setting in an artistically relevant way, but not really to its narrative. The haunted house scenario from the first ALIEN has been adapted as a game of hide-and-seek thirty-five years later with the game ALIEN: ISOLATION, and the cinematic roller-coaster-ride of its sequel has provided the template for several incarnations of first-person-obstacle courses from ALIENS: THE RETURN by Electric Dreams to ALIEN VS. PREDATOR and ALIENS: COLONIAL MARINES structured by attack waves.

The gaming experience rather than a complex narrative once again inspired Paul W.S. Anderson in his crossover film ALIEN VS. PREDATOR (2004). The recurring celebrity death match between the two iconic monsters of modern horror and action cinema is an instructive example for a successful transmedia franchise that does not relate to the hierarchy of an original kernel anymore and supports Jenkins' observation that transmedia storytelling takes a departure from circling around a canonical ur-text.[17] It originated as a comic book crossover, followed very soon by video games, board games and two films, but none of them could be considered to be a direct adaptation of the other. The common ground between all instantiations of ALIEN VS. PREDATOR is the setting, which combines the two character types with all their special skills and turns their confrontation

16 Dansky, Richard: "Introduction to Game Narrative," in: Chris Bateman (eds.), *21st Century Game Design,* Hingham: Charles River Media 2006, pp. 1-24.

17 Jenkins, Henry: "Transmedia Storytelling 101," in: *Confessions of an Aca/Fan-Blog,* 22.03.2007, http://henryjenkins.org/2007/03/transmedia_storytelling_101.html

into a ludic event. The cineludic form employed in the ALIEN VS. PREDATOR franchise is not really concerned with narrative; the transmedia connections refer to iconography, character skills comparable to a table-top strategy game, and the setting that turns the scenery from the ALIEN films into an arena. Even though it seems to have been lost somewhere between the several transmedia rematches between Aliens and Predators, the aspect of playful art is still present by elaborating on the biomechanic designs of cult Swiss artist H.R. Giger and the set design by graphic illustrator Ron Cobb. Their contributions to the ALIEN series are paradigmatic for the pragmatic approach toward artistic ambitions in transmedia enterprises that very much depend on the context and not on the object itself. An alien on display within a H.R. Giger exhibition is an artistic design; the same alien fighting a predator does not lose its artistic value in regard to its design even if it is obviously occupied with other concerns at the moment. Both are part of the same genre setting but within quite different cultural contexts. They are part of a larger mental map connecting several areas of the same transmedia patchwork.

CHARTING TRANSMEDIA MENTAL MAPS AND CONFIGURING MYTHOLOGICAL PATCHWORKS

An important element of transmedia culture is that the connection between art and its popular application, appropriation, and transformation results in a dynamic mythological patchwork that connects narratives with settings, scenarios, and playgrounds. Pop-cultural mythological patchworks like STAR TREK, STAR WARS or the comic book universes created by Marvel Comics (and maybe occasionally even DC Comics) are reminiscent of a rhizome, a labyrinthine structure in which all points are connected to each other. But in contrast to postmodernist hypertext literature, which often has been discussed as a paradigmatic application of the idea of the rhizome, mythological patchworks allow their audience members to choose between navigating narrative elements as well as wandering around and playing with the setting. Their structure can be compared to the open-world design found in multi-player online role-playing games like WORLD OF WARCRAFT (since 2004) and STAR WARS: THE OLD REPUBLIC (SINCE 2011) or in the navigable environments of the GRAND THEFT AUTO-series and other productions by developer Rockstar Games. You can follow a series of quests with some alternative branches and experience a narrative similar to a guided tour through the simulated world, but you can also go exploring for yourself and

compose virtual snapshots of the landscape or take a walk to find out what can be seen around the next corner.

As a way of exploring these playful prospects of transmedia enterprises the terms of *psychogeography* and *dérive* from the 20th century Situationists could be quite useful. They originated in the context of avant-garde and political artistic actions and seem to be very well suited for application to the borderlands between the museum, culture industries, and pop-cultural practices in open-structured real and virtual worlds. Philosopher Guy Debord defined the term *psychogeography* in 1955 "as the study of precise laws and specific effects of the geographical environment, consciously organized or not, on the emotions and behavior of individuals."[18] Through the tactic of *dérive*, the Situationists produced mental and emotional maps of urban cities. They promoted a new way of perceiving the city with a rhythm that contradicted the logic of late capitalism. In his study *Avant-garde Video Games—Playing with Technoculture*, digital media scholar Brian Schrank comments on the intentions behind psychogeography and dérive: "The Situationists went beyond entertainment to remix urban space and reclaim the public sphere as a place for collective play with reality. They would drift through a city in a game they called the *derive*. A derive is a spontaneous journey in which travelers allow the aesthetics of the architecture and geography to affect them emotionally as well as subconsciously, and direct them so that they might foster new relationships with space."[19]

The techniques of *derive* can be used to chart mental maps of transmedia patchworks and their impact on a psychogeography of popular culture. Instead of turning myths into a mysterious and timeless deeper truth, mythology becomes a game of semiotics. The patchwork across different media consists of building blocks that can be renegotiated and replaced. On a larger scale they still operate like the kernels and satellites discussed by Seymour Chatman. But in contrast to fixed narratives with a beginning, a middle and an end, the focus of the audience can be relocated to another segment or period of the fictional universe. Meaningful units and potential new kernels can be constructed from events and constellations that have originally been considered satellites. Segments of the mental map can be adjusted to different media and specific cultural contexts creating new

18 Debord, Guy: "Introduction to a Critique of Urban Geography," in: *Nothingness.org*, 1955, accessed 07.01.2017.

19 Schrank, Brian: *Avant-garde Videogames. Playing with Technoculture,* Cambridge, Mass.: MIT Press 2014.

kernels from former satellites. This process will be discussed using the example of the film ROGUE ONE: A STAR WARS STORY (2016).

That STAR WARS belongs to the most enduring mythological patchworks in film history is often reduced to the fairy-tale like core and its archetypes of good vs. evil. But just like the mechanics of an emergent game with simple rules that allow for interesting and complex variations, STAR WARS can integrate very different genre settings and modes that for a symbolic reconfiguration of the original point of departure. A very significant example of this process can be found in Gareth Edwards' ROGUE ONE: A STAR WARS STORY (2016) which turns a former minor background story into a major plot event to broaden the spectrum of representations. As a sign of progressive politics and following the interpretation of the Empire as an evil white supremacist organization, the film's cast combines actors from different cultural backgrounds like Mexican actor Diego Luna, British-Asian actor Riz Ahmed, African-American independent film veteran Forest Whitaker, Hong Kong star Donnie Yen (adding martial arts moves to the Jedi lore), and British actress Felicity Jones as protagonist Jynn Orso representing another strong female character. With ROGUE ONE illustrating the multicultural aspect of the rebel alliance the film provoked hostile reactions from the American extreme right. This political aspect had always been hinted at in the subtext of the original films with George Lucas modeling the Emperor on Richard Nixon and comparing the battle of Endor in RETURN OF THE JEDI (1983) with the war in Vietnam in the audio commentary for the original trilogy. ROGUE ONE defines a new kernel of the STAR WARS patchwork by building upon a sentence from the first film's iconic opening crawl that mentions plans of the death star being stolen by rebel agents during an intense battle. The transmedia aspect of this process becomes obvious when considering the first-person shooter DARK FORCES, a STAR WARS-variation of the successful first game in the *DOOM* series. It featured rebel outlaw Kyle Katarn and a daring female rebel pilot, who could have been an inspiration for ROGUE ONE's Jyn Orso, on a mission to steal the Death Star plans from the Empire. The scenario of ROGUE ONE's showdown around an Imperial base is very reminiscent of the level architecture in DARK FORCES. The position of an important switch activated by the rebels in the wide-open space outside of the base (so that it could not be missed) also seems to be informed by ludic architecture rather than cinematic logic.

ROGUE ONE provides not only a more differentiated cast of characters and articulates a symbolic update for the conservative backlash of the Trump era, it interprets the background story only implied in the opening credits from 1977 and acted out in a video game in 1995, turning it from a satellite into a new kernel of the STAR WARS mythology.

In this regard, ROGUE ONE operates very well in the tradition of genre movies and their relation to historical and cultural contexts. In his introduction to film genre analysis Barry Keith Grant emphasized the connections between genre production and the mentality articulated in popular culture at a certain time:

"Genre movies have been commonly understood as inevitable expressions of the *zeitgeist*. This is true not only of individual genre movies, but also of the changing patterns and popularity of different genres and of the shifting relationships between them. For whether they are set in the past or in the future, on the mean streets of contemporary New York or long ago in a galaxy far, far away, genre movies are always about the time and place in which they are made."[20]

In contrast to traditional approaches towards genres that consider them to be static formulas, the idea of configuring kernels and satellites within navigational structures provides not only a dynamic starting point for historical poetics but also a perspective on transmedia interactions that takes into account the changing possibilities of play. ROGUE ONE elaborated on the background story of the original trilogy via the ludic detour of the DARK FORCES / JEDI KNIGHT series. It can be considered as a poignant example of playfully navigating and reinterpreting the mental maps of the genre settings associated with one of the best known transmedia franchises.

Charting transmedia psychogeography could connect films and games beyond the disappointments of dire adaptations, and it could update hermeneutic processes as a ludic approach beyond the circular monorail of self-contained masterpieces. Instead of being colonized in a top down way, the borderlands between culture industry and museum would mark an area for games of playful art.

Of course the examples discussed here are rather located in the field of the completely furnished worlds Umberto Eco associated with cult movies like CASABLANCA [21] and not in the radical politics of 1960s Situationism surrounding Guy Debord. But they can hint at a few playful antidotes to the standardization of corporate culture.

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20 Grant/Barry Keith: *Film Genre. From Iconography to Ideology*, London: Wallflower Press 2007.

21 Eco, Umberto: *Travels in Hyperreality*, London: Picador 1986.

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Marshmallows and Bullets

FEDERICO IGARZÁBAL ALVAREZ

This article takes a close look at the RESIDENT EVIL HD REMASTER of 2015 through the lens of the psychological notions of delayed gratification, time perspective, and temporal discounting. These concepts provide a coherent framework with which to analyze how players interact with video games in general, but are especially well suited for the analysis of the aesthetics of survival horror video games such as RESIDENT EVIL. Our mental construction of time plays a significant role in decision making processes directly related to resource management. Survival horror is characterized by the management of scarce resources (e.g. ammunition or health) in unsettling environments, and various psychological studies concerned with the aforementioned notions, in particular Walter Mischel's famed "Marshmallow Test," shed light on some of the mental processes that affect our interaction with this video game genre and RESIDENT EVIL in particular.

A few years ago, a commercial for the Kinder Surprise chocolate egg aired on German television.[1] In it, a kid sits at an empty table in a room otherwise devoid of furniture or decoration, with the exception of a flip chart. A young woman hands the girl a Kinder Surprise chocolate egg uttering the following instructions: "This surprise egg is for you and, if you don't open it until I come back, you'll get a second one."[2] As the woman speaks, the viewer sees several takes of different children, showing that the pretend experiment was conducted

1 At the time of writing the commercial is available online on the page of the advertising agency Zmn Goldenen Hirschen: https://www.hirschen.de/agentur/arbeiten/der-neugier-test.html, January 26, 2017.

2 My translation.

several times with different "subjects". This ad produced by the German advertising agency Zum Goldenen Hirschen is called DER NEUGIER-TEST (The Curiosity Test). The Kinder Surprise eggs are known for hiding a trinket inside—the surprise—that the kids can obtain by eating the chocolate. The commercial continues as it offers the viewer a manifold display of anxious behavior: one youngster stares at the egg with a furrowed brow; another shakes it near her ear and looks at the camera with innocent eyes; a third hides under the table, comes back up slowly, takes a short peek at the egg, and immediately hides under the table again; a fourth one grabs her head and gives the camera an uneasy look. In the end, as expected, they cave to temptation and sink their teeth into the delicious treat. The commercial ends with the slogan "Na, Neugierig?"—which roughly translates to "well, curious?"—displayed in a colorful font. What the question seems to imply is that the kids opened the candy and ate it to find out what kind of toy was hiding inside, emphasizing the *surprise* part of the experience of eating a Kinder egg instead of the fact that kids love chocolate, or almost any food rich in sugar and fats, for that matter—an understandable choice from the point of view of advertising, since that is what distinguishes the product from the competition. But while curiosity might have enhanced the appeal of the chocolate egg, any type of candy—with or without a surprise—would have likely done the trick.

In fact, marshmallows have accomplished the very same feat a few decades ago. DER NEUGIER-TEST was actually mimicking a famed longitudinal study started by psychologist Walter Mischel in the late 1960s and early 1970s known as the Marshmallow Test,[3] which spanned for many decades with several different measurements.

The experiment proceeded in a very similar way to the commercial. The children sat alone at a table in a room and one of the researchers gave them a Marshmallow with almost the same guidelines: the children had the choice to either eat the marshmallow right away, or to wait for the adult to come back without eating it, in which case they would get a second one. They could also call the researcher back by ringing a bell, which would also deny them the possibility of a second marshmallow. The experiment was carried out (with some

3 Cf. Mischel, Walter/Shoda, Yuichi/Peake, Philip K.: "The Nature of Adolescent Competencies Predicted by Preschool Delay of Gratification," in: *Journal of Personality and Social Psychology* 54/4 (1988), pp. 687-696. Cf. Mischel, Walter/Shoda, Yuichi/Rodriguez, Monica L.: "Delay of Gratification in Children," in: *Science* 244, Issue 4907 (1989), pp. 933-938.

variations) with over 500 children ages four and five during the course of several years. While the researcher was away, the kids were either directly observed or filmed. Once again, just like in the commercial, the kids used different strategies in order to pass the time and resist eating the candy that was handed to them. But here is where the similarities between the streamlined portrayal of the commercial and the results of impartial scientific practice start to wane: while some kids ate the marshmallow right away or at some point before the researcher came back, others were able to accomplish the task at hand and received the promised reward. That is, some kids had the capacity to delay the pleasure produced by eating a marshmallow and tolerate the unpleasant feeling produced by this postponement in favor of a future, superior benefit.

The Marshmallow Test was just the first stage of Mischel's long-term study. Fifteen years later around one hundred of the 500 children that took part in the experiment were tested again. This time, the researchers looked at their performance in school and asked their parents to judge their child's social and academic skills. The researchers found out that the children that performed best in the Marshmallow Test tended to perform better in school and their parents made a more positive judgement of their skills. This showed that the Marshmallow Test could, to some degree, predict a child's later success in school and in their social environment.

It should be noted, as Marc Wittmann[4] points out in his recount of the experiment, that a look at the original data shows that the connection between the early test results and the later adolescent performance in school and social life is at best moderate. Several other factors contribute as well to the development of social and academic skills. Nonetheless, Wittmann continues, the correlation stands: those kids who waited longer for the adult to come back with the second marshmallow were more likely to perform better in school and in their social lives in adolescence. This shows that the ability to voluntarily postpone gratification in favor of a better, deferred reward is a key aptitude for goal-oriented decision making.

This can be better understood within the context of what Zimbardo and Boyd, following Kurt Lewin,[5] call time perspective (TP):

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4 Wittmann, Marc: *Gefühlte Zeit. Kleine Psychologie des Zeitempfindens*, Munich: C.H. Beck 2014, p. 15.

5 Lewin, Kurt: *Field Theory in the Social Sciences: Selected Theoretical Papers*, New York: Harper 1951.

"TP is the often nonconscious process whereby the continual flow of personal and social experiences are assigned to temporal categories, or time frames, that help to give order, coherence, and meaning to those events. [...] Between the abstract, psychological constructions of prior past and anticipated future events lies the concrete, empirically centered representation of the present."[6]

Time perspective is, simply put, the process of organizing the "continual flow" of life into three temporal frames: past, present, and future. Of those three categories, two are top-down, *off-line* constructions of events—the remembered past and the conjectured future—and one is bottom-up, *online* sensory perception—our awareness of the present status of the environment. But our attention is not always evenly distributed between these three temporal categories. Some might emphasize the future over the present and the past, or the past over the present and the future. These temporal biases have a significant impact on our decision-making process.[7] The more future-oriented one person is, the longer they will be able to delay gratification, while present-oriented minds will rather seize the moment without giving future consequences too much thought.

Present-oriented decision making is what psychologists also call temporal myopia.[8] We all have temporal myopia to some degree, since (all other things being equal) we would rather obtain a particular benefit right now (say, 50 dollars) than knowing that we will receive it at some point in the future. We would even take a slightly smaller benefit now (45 dollars) than a slightly larger one in the future (50 dollars), as shown by a study conducted by Gregory Madden.[9] The future is muddled with uncertainty, so anything that lays further ahead in time is consistently devalued. Temporal myopia can thus be measured with tasks on temporal or delay discounting such as those used by Madden, showing that the value of a particular good is reduced relatively to the time it takes to obtain it.

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6 Zimbardo, Philipp G./Boyd, John N.: "Putting Time in Perspective: A Valid, Reliable Individual-Differences Metric," in: *Journal of Personality and Social Psychology* 77/6 (1999), pp. 1271-1288.

7 P. Zimbardo/J. Boyd: *Putting Time in Perspective: A Valid, Reliable Individual-Differences Metric*, p. 1272.

8 M. Wittmann: *Gefühlte Zeit*, p. 16.

9 Madden, Gregory J./Begotka, Andrea M./Raiff, Bethany R./Kastern, Lana L.: "Delay Discounting of Real and Hypothetical Rewards," in: *Experimental and Clinical Psychopharmacology* 11/2 (2003), pp. 139-145.

Several other follow-up experiments in the longitudinal Marshmallow study were made. In 2002 and 2003, for instance, a study showed that "longer delay of gratification at age 4 years was associated with a lower BMI [body mass index] 3 decades later."[10] Another follow-up experiment was conducted in 2011 in which 59 of the subjects—now in their forties—were tested.[11] The subjects sat this time in front of a computer screen which displayed a sequence of photographic portraits. Depending on the characteristics of the facial expression displayed on the monitor, the subjects had to either press a button as fast as possible or do nothing. Each image remained very briefly on screen, giving the subjects little time to react. Previous studies had shown that we tend to react more readily in emotionally loaded than in emotionally neutral situations,[12] so when the subjects were asked to react to neutral facial expressions with the press of a button and not to react to happy faces, those who had failed to obtain the second marshmallow the first time around forty years earlier were now more prompt to press the button when a happy facial expression showed up, even though they were asked not to. This study linked the capacity to suppress impulsive reactions to brain areas located in the frontal cortex.[13]

A vast number of video games relate in several ways to Mischel's findings. Video game genres could even be categorized in terms of how they engage with our temporal perspective, and one might speculate that the preference for a particular genre is connected to the temporal frame a person tends to prioritize. While some games are focused on fast reflexes and thus more attuned with a present-oriented mindset, others focus heavily on careful planning and resource management. Success in a strategy game, for example, depends largely on the

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10 Schlam, Tanja R. /Wilson, Nicole L. /Shoda, Yuichi, et al.: "Preschoolers' Delay of Gratification Predicts their Body Mass 30 Years Later," in: *The Journal of Pediatrics* 162, Issue 1 (2013), p. 90-93.

11 Casey, B. J./Somerville, Leah H./Gotlib, Ian H., et al.: "Behavioral and Neural Correlates of Delay of Gratification 40 Years Later," in: *Proceedings of the National Academy of Sciences of the United States of America* 108/36 (2011), loc. 14998-15003.

12 Ochsner, Kevin N./Gross, James J.: "The Cognitive Control of Emotion," in: *Trends in Cognitive Science* 9/5 (2005), pp. 242-249. Sanfey, Alan G.: "Social Decision-Making: Insights from Game Theory and Neuroscience," in: *Science* 318, 598 (2007), pp. 598-602. Heatherton, Todd F./Wagner, Dylan D.: "Cognitive Neuroscience of Self-Regulation Failure," in: *Trends in Cognitive Science* 15, Issue 3 (2011), pp. 132-139.

13 M. Wittmann: *Gefühlte Zeit*, p. 30.

players' capacity to spend or save resources and command their units with long-term goals in mind. Decisions made early in the game can have a strong impact on what happens in the following hours. Shooters, on the other hand, demand fast and precise reactions from the player, and, though some foresight is nonetheless required, what will happen in the next half hour is not as important.

The genre known as survival horror is of particular interest in this context, since it focuses specifically on overcoming temporal myopia. This genre is well known for featuring vulnerable protagonists that have to survive in an unsettling hostile environment with very limited resources. In what follows I will show how the psychological notions of time perspective, temporal myopia, and delay discounting are reflected in one of the games that helped define the genre in the mid-1990s and which is now popularly regarded as a survival horror[14] classic: RESIDENT EVIL.[15]

Figure 1: Chris Redfield in the main hall of the mansion in the RESIDENT EVIL HD REMASTER.

14 As a matter of fact, the survival horror label was first used by RESIDENT EVIL itself and it later caught on as a genre. Cf. Therrien, Carl: "Games of Fear: A Multifaceted Historical Account of the Horror Genre in Video Games," in: Perron, Bernard (ed.), *Horror Video Games: Essays on the Fusion of Fear and Play*, Jefferson, North Carolina: McFarland 2009, p. 32.

15 RESIDENT EVIL (Capcom 1996, ●: Capcom)

RESIDENT EVIL:[16] THE MECHANICS THAT DEFINED SURVIVAL HORROR[17]

The game begins as S.T.A.R.S.' (Special Tactics And Rescue Squad) Alpha team is searching for the Bravo team, which disappeared during the investigation of a series of gruesome murders that took place in Raccoon City, where victims have been savagely slain and eaten by groups of people. After finding the remains of the missing party's crashed helicopter with the deceased body of one of the members, the team gets attacked by a pack of decaying wild dogs, who take down one of the teammates. The survivors run towards a mansion for shelter as they see their chopper take off, abandoning them in the murky woods. This sequence is shown to the player as an introductory cutscene.[18]

As far as horror settings go, the abandoned mansion is quite the cliché, but it provides the game with a fitting somber atmosphere nonetheless. Once inside the mansion, the player takes control of one of two available characters, Jill Valentine or Chris Redfield—the choice is made before starting a new game. Albert Wesker, a third teammate, is still alive and with the selected protagonist, while a fourth character, Barry Burton, is there with Jill but goes missing if the player

16 The following game analysis shares some similarities with one I wrote on the filmic adaptation of RESIDENT EVIL. Cf. Alvarez Igarzábal, Federico: "Bits to the Big Screen: Zur Filmadaption des Computerspiels Resident Evil", in: *Film-Konzepte* 46 (2017).

17 The analysis focuses on the most recent re-release of the game, the RESIDENT EVIL HD REMASTER (Capcom 2015, ●: Capcom). This latest version is a remaster of 2002's RESIDENT EVIL (Capcom 2002, ●: Capcom) remake for the GameCube console. Some relevant differences between the original 1996 release and the updated version (aside from the graphical revamp) will be mentioned in footnotes. A more comprehensive look at these differences can be found in the following Kotaku article by Patrick Klepek: http://kotaku.com/key-changes-make-the-newest-version-of-resident-evil-a-1680713415 or in this Wiki Guide by IGN: http://www.ign.com/wikis/resident-evil/Resident_Evil_Version_Differences, both accessed on January 26, 2017.

18 The original live-action cinematic cutscene was changed for an updated CGI version for the GameCube remake, also used in the HD remaster. In the CGI version, we get a good look at the dogs, while in the old, live-action cutscene all we see are extreme close-ups of growling and barking snouts, which conceal the fact that they are canine zombies.

selects Chris. The next step for the remainder of the Alpha team is to explore the mansion and to find a way to escape.

Choosing whether to play as Jill or Chris doesn't change the story significantly. When choosing Jill, for instance, Chris disappears on the way to the mansion and the player teams up with Barry. Choosing Chris introduces a surviving Bravo team member, Rebecca Chambers, and Jill disappears once inside the mansion. Wesker goes missing shortly after the beginning in both cases. Most importantly, each character possesses its own traits: while Jill has lower health (she can be killed faster) and deals less damage than Chris, she has a bigger inventory and can thus carry more items around at the same time. They also obtain different items: Chris receives a flamethrower at a later point in the game and Jill obtains a grenade launcher. These and other differences make playing the game with each of the characters a slightly different experience, but it remains true in both cases that the game is punishingly difficult. Choosing the character is not so much a matter of difficulty as of desired playstyle.

Once the game starts, the player soon finds out that the house is infested with ravenous zombies. While these enemies move slowly and alert the player of their presence with their conspicuous growls and groans, the game's mechanics—in combination with the atmospheric setting—manage to make the encounters challenging and frightening.

Let us start with the camera. RESIDENT EVIL has fixed camera angles from which the player observes the action. Once the player character moves to the edge of the frame, the game switches to a subsequent camera angle, revealing space that previously remained unseen. Since camera angles are predetermined, the player never knows for sure where the character will stand next in relation to the frame, which makes movement planning more challenging than with an over-the-shoulder, player-controlled camera (see figs. 2 and 3). While the current angle might be a bottom-up view, the next one could place the camera above the avatar and in the opposite side of the room. Additionally, fixed camera angles can conceal information by leaving it off-camera or by hiding it on the back sides of objects.

In addition to its fixed camera angles, RESIDENT EVIL uses what is popularly known as 'tank controls' for the movement of the avatar. This means that the player makes the character move forward in the direction it is facing at that moment by pressing up, and backwards by pressing down. To rotate the avatar in order to change direction the player needs to press left or right. The more common (and intuitive) alternative to this type of movement eliminates the need to rotate the player, in that the direction in which the character moves will directly correspond to the direction pressed on the controller: up moves the character

upward in the frame or outward from the camera, down downwards or towards the camera, right to the right side of the frame, and left to the left side. The character will move forward in the indicated direction and rotate automatically if needed.[19]

Figure 2: Upper: Chris Redfield walks towards the camera. Lower: Once the character reaches the edge of the frame, the game switches to a camera with the opposite angle, now displaying the character from behind.

19 The tank controls were the only option in the original game and in the 2002 remake. The HD remaster also offers the alternative, more intuitive setting.

Figure 3: Upper: The character aims the gun at an enemy with the over-the-shoulder camera in RESIDENT EVIL 4 ULTIMATE HD EDITION.[20] *Lower: Aiming in RESIDENT EVIL with with a fixed camera (Source: Screenshots)*

The game complicates character movement even further by implementing a constrained shooting system that does not allow the character to walk while aiming a weapon. In order to shoot, the player has to press and hold the button assigned to

20 RESIDENT EVIL 4 ULTIMATE HD EDITION (Capcom 2014, ●: Capcom Production)

aiming so that the character lifts the weapon. Once in this stance, the player can shoot with the press of a second button. To aim the gun up or down, left or right, the player has to use the same keys assigned to movement. These will either rotate the avatar (pressing left or right) or pivot its arms up or down (pressing up and down)—aiming the shotgun up and firing it point-blank at a zombie, for example, is likely to take it down with a single headshot. This means that every encounter can be approached with a binary fight-or-flight strategy, but never both at the same time—it is impossible to shoot while retreating, for instance. If the player chooses to fire, they commit to a particular position in space as long as they continue aiming the weapon. If he or she chooses to run away, the character becomes defenseless. If the player-character is injured during an encounter and its health condition worsens, it will start limping, which makes it even more vulnerable to enemy attack. Once zombies have been neutralized, the player needs to burn their bodies or they will otherwise come back as the faster and tougher Crimson Heads.[21] To this end, the player needs to carry around a lighter (which Jill has to find but Chris carries from the beginning in an especially dedicated inventory slot) and a fuel canteen. The latter has limited uses and needs to be refilled periodically.

RESIDENT EVIL is not about running through corridors, guns blazing—as is the case in DOOM[22] or other action shooters; it is about knowing when to fight and when to flee. Another feature that makes the game particularly challenging is that the player can only save the game at predefined locations scattered around the house. These are signaled by typewriters, which are usually inside safe rooms where the player is free from harm—a fact underscored by a soothing tune that plays when inside these rooms. When the player interacts with a typewriter, the save menu is opened, but in order to be able to save the player needs an ink ribbon, a resource that is always in limited supply. Thus, even the act of saving your game requires careful consideration. For this reason, dying in RESIDENT EVIL tends to be more punishing than in games with frequent checkpoints or in which the player can save at will, as it is more likely that the player will lose valuable progress.

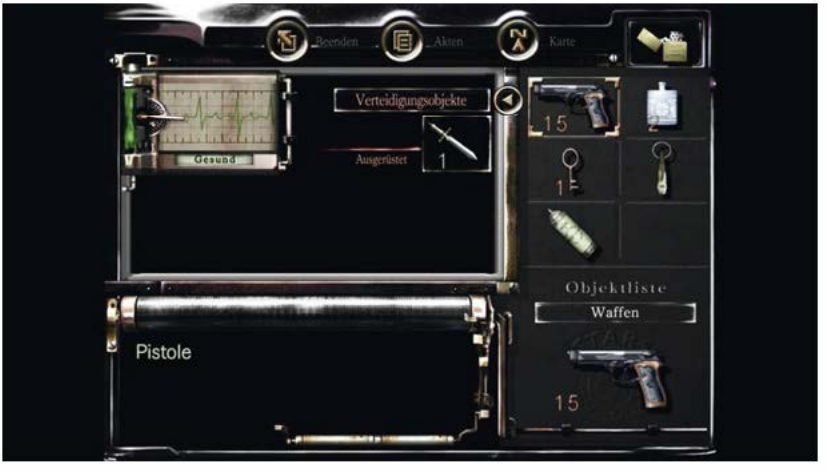
This leads me to the final point of this game analysis: resource management. Not only the ink ribbons, but every resource in RESIDENT EVIL is scarce. The player never has a surplus of bullets or medicinal items. Every shot fired counts

21 Both the limping animation and the Crimson Heads were additions of the 2002 remake.

22 DOOM (GT Interactive 1993, ●: id Software)

and every missed shot leaves a bitter aftertaste. Even when the player somehow manages to obtain several weapons and their respective ammunition, both Jill and Chris have limited inventories (Jill has eight slots and Chris has six). The player has to choose what objects to carry around at any given time and the rest has to be left in item boxes found in the safe rooms[23]—weapons occupy one inventory slot, extra ammunition can be stacked on a second one. Since the player usually has to equip keys and other objects that open new areas of the mansion, herbs for medicinal purposes, the lighter (if the player chose Jill) and the fuel canteen, and perhaps leave one or two slots free just in case, there is not much space left for ammunition and weapons.[24] Inventory management under these conditions is by no means an easy task.

Figure 4: Chris's inventory with five out of six slots occupied



23 Except when playing in "Real Survival" mode, all the boxes share content, so that any object might be recovered from any box, regardless of in which one it was stored in the first place.

24 The 2002 remake added special slots for defensive items (such as daggers) that can be used to draw back or kill enemies while they are attacking you, and that were kept in the HD remaster.

THE BULLET TEST

In the disquieting rooms and corridors of the abandoned mansion, the fear produced by approaching undead might lead to a careless reaction that could waste an unnecessary amount of ammo. To avoid impulsive squander, the player can choose to attack lone zombies with the knife, a clumsy and ineffective weapon that takes one inventory slot, but has the evident advantage of not needing ammunition. In this way, bullets are saved for situations where the player faces two or more zombies at the same time, or more potent enemies. Another possible strategy is to simply run past the slow-moving zombies when the room gives the player enough leeway.

These approaches might supplant the feeling of relative safety provided by a firearm with an unnerving sense of danger. Using the knife has the disadvantage that it is a very ineffective melee weapon and, since the zombies attack exclusively at close range, anything short of flawless timing can give them a good chance to strike. Running past them might also get the player character dangerously close to the enemies and some can even follow the player character into different rooms if they are not eliminated. A gun, on the other hand, takes care of the zombies while keeping them at bay, but the reward for using the knife or evading enemies is clear: the player can move ahead without having used a single bullet, which could prove valuable for future (and possibly more challenging) encounters.

Even while using the handgun, impulsive reactions might lead to imprecise firing and a wasteful use of ammunition, especially given the quirkiness of RESIDENT EVIL'S controls and the often unhelpful camera angles. In the mansion's narrow spaces, it is important to keep a steady hand, and if the player senses that a rushed reaction could lead to a misfire, then fleeing and finding a better stance from which to attack is the best strategy. Just like the test subjects that pressed the button when a 'forbidden' happy face flashed on the screen, impulsive players might start shooting before thinking. Zombies are slow but tough and taking them down requires several gunshots from the limited magazine. If a firearm is emptied and the approaching Zombie has not yet fallen, the player will need to reload the gun to continue firing (provided she is carrying the extra ammunition), which starts an animation that makes the character vulnerable to attack.

RESIDENT EVIL is a constant tradeoff between distress and safety—or at least a relative feeling of security. Since games tend to increase in difficulty with time

(and this one is no exception[25]), saving ammunition for later challenges is crucial. Temporal myopia can be a serious disadvantage in this type of game, and future-oriented players will likely have a better chance at succeeding than more present-oriented ones. Choosing the stressful and riskier strategy in the present might contribute to a safer stance in the future. From this perspective, RESIDENT EVIL is a virtual "bullet test," where ammunition is to players what marshmallows were to the children in Mischel's study.

PLAYING THE PLAYER

As we play games, they, in turn, play with our cognitive capacities. Looking at the work of psychologists like Walter Mischel not only reveals a part of the human psyche that has a crucial function in our interaction with video games, it can also be useful to understand how exactly game design can hijack our cognitive systems and influence our behavior.

The survival horror genre poses a concrete challenge in psychological terms. The settings and mechanics are expressly designed to elicit fear in players: the ominous rooms of the desolate mansion in RESIDENT EVIL are teeming with lurking threats that can quickly end the player-character's life, and the shortage of resources combined with constrained movement and shooting mechanics elicit a constant sense of helplessness. The players' mental hazard detectors are thus easily agitated, to the point that they can get startled by false alarms, like the shadows casted by a candle's flickering light; not to mention the justified scares, like zombies unexpectedly breaking in through windows, or waiting for the player right around a corridor corner. Players are thus prone to react impulsively and to lose focus of long-term goals. A successful player needs to be able to keep a clear mind in spite of the myriad of unsettling stimuli that pullulate throughout the mansion.

Nevertheless, players are not invariably bound by their own cognitive proclivities. In one of the instances of their Marshmallow Experiment, Mischel and his team encouraged some of the kids to use different strategies that could dis-

25 At one point in the game, the zombies are replaced by anthropomorphic reptiles called Hunters, which move faster and are more resilient.

tract them from the reward.[26] These strategies had a dramatic impact on the amount of time children were able to wait. Some were instructed, for instance, to think of something fun while waiting, others of something sad, and others about the reward. Thinking about something fun proved to be a very successful strategy compared to thinking about something sad or focusing on the reward. Those kids in the "think fun" group had a mean waiting time of over 13 minutes, while the "think sad" group waited for a mean of five minutes and the "think reward" for just four. This experiment shows that, though temporal biases are somewhat predefined dispositions, they are not absolutely determinant factors of behavior. By modulating their states of mind, the subjects could significantly improve (or impair) their performance in the test.

An alternative strategy that the researchers instructed the children to apply was to imagine that the marshmallow on the table was only a picture of a marshmallow by adding an imaginary frame to it.[27] Children who did so delayed gratification for almost 18 minutes. Curiously, a group of kids who participated in the experiment with an actual picture of a marshmallow instead of the real thing waited for the same amount of time as the ones who imagined that it was a picture. Yet another group, which was given a picture but instructed to imagine a real marshmallow, waited for less than six minutes (all values being averages). These results demonstrate that the mental representation of the object has a significant impact in decision making. Granted, a kid's imagination is normally more powerful than that of a teenager or an adult, but there is a way in which this still applies after infancy.

The philosopher Tamar Szabó Gendler distinguishes between the notions of *belief* and *alief*.[28] Belief is that which we rationally understand as true, while alief is that which we react to, sometimes in spite of disbelieving it. Among other examples, Gendler mentions the experiments conducted by Paul Rozin which showed that adults "are reluctant to drink from a glass of juice in which a completely sterilized dead cockroach has been stirred, hesitant to wear a laundered shirt that has been previously worn by someone they dislike, and loath to eat

26 Cf. Mischel, Walter/Ebbesen, Ebbe B./Raskoff Zeiss, Antonette: "Cognitive and Attentional Mechanisms in Delay of Gratification," in: *Journal of Personality and Social Psychology* 21/2 (1972), pp. 204-218.

27 Cf. W. Mischel/Y. Shoda/M.L. Rodriguez: Delay of Gratification in Children, p. 935.

28 Gendler, Tamar Szabó: "Alief and Belief," in: *The Journal of Philosophy* 105/10 (2008), pp. 634-663.

soup from a brand-new bedpan."[29] While every grownup person in their right mind knows that a new bedpan is a completely innocuous food vessel, the mental associations produced by its originally intended use as an in-bed toilet make it revolting to eat out of it. Something similar happens with fiction. When playing RESIDENT EVIL, we *believe* that it is a game and that everything we see is ultimately just zeroes and ones inside our computer, but we *alieve* that we are alone in a zombie-infested mansion. If players focus on their beliefs instead of their aliefs by reminding themselves that it is just a game, it will result easier to maintain a future-oriented mindset—just like the children who looked at the picture of the marshmallow keeping in mind that it is just a picture.

In an early version of the experiment, Mischel wanted to find out if the kids could wait longer while the reward was in the room or when it was not in the room. He found out that "the presence of the rewards serves to increase the magnitude of the frustration effect and hence decreases delay of gratification by making the waiting period more difficult."[30] That is, the very presence of the reward made it more tempting. Applying this logic to RESIDENT EVIL, the best thing for a player to do in order to save a particular resource is to simply store it in the item box. If the player carries the handgun around, it will be harder to limit herself to using the knife and/or avoiding zombies. Leaving the gun in the chest might seem like the commonsensical thing to do—after all, you cannot use what you do not have. But, following the experiment, one could even predict that the allure of the gun would decrease as well and the player would focus on the available options instead. It would be reasonable to expect the player to be more efficient at using the knife in this condition than if the easier option of relaying on a gun were readily accessible.

CONCLUSIONS

The above extrapolations of Mischel's findings hint at their potential application in psychological studies involving video games. Our cultural objects have a lot to reveal about ourselves if we know how and where to look. Video games, in contrast to other popular media, have an additional interactive layer that makes them especially suited for observing behavior and decision making. The findings

29 Ibid., pp. 635-636.

30 Mischel, Walter/Ebbesen, Ebbe B.: "Attention in Delay of Gratification," in: *Journal of Personality and Social Psychology* 16/2 (1970), pp. 329-337.

of such experiments could hence contribute to the fields of game studies and cognitive science alike, and this could in turn provide valuable insights for game developers.

The capacity to resist short-term gratification in favor of later benefits is certainly not just central to psychological experiments and video games. It is a conundrum we face whenever we decide to go on a diet, stop smoking, start exercising, or study for an exam instead of playing video games, to name a few examples. RESIDENT EVIL takes this familiar experience and overemphasizes it through the interplay between its audiovisual presentation and its mechanics: While the environment is designed to elicit impulsive behavior, the mechanics require players to be thrifty and carefully plan their actions. The discomforting effect produced by these conflicting stimuli embodies what could be called an 'aesthetic of self-control'.

This evokes the ancient philosophical question: Why do we enjoy cultural products (games, in this case) that exaggerate situations that we would normally find unpleasant? RESIDENT EVIL's success is evidenced by its two remakes, several sequels and spinoffs, and the transmedia extensions like films and comics that it has spawned since its first appearance twenty years ago. The question certainly exceeds the scope of this analysis, but one thing seems clear: The '[insert scarce resource here] tests' of the survival horror genre are a cherished form of entertainment.

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Teaching Game Studies

Experiences and Lessons from Tampere

FRANS MÄYRÄ

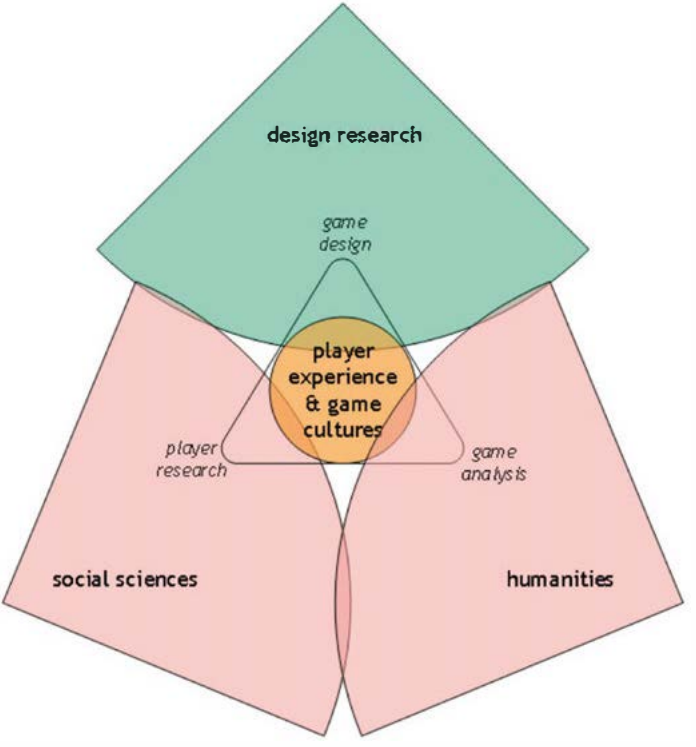
INTRODUCTION: ORIGINS AND ORIENTATION

Game studies can be conceptualized in many different ways—for example, as a young academic discipline with multiple theoretical and methodological approaches, but unified in its subject matter and thus rather similar to literary studies or film studies. Or, game studies can be interpreted more loosely, as a research field where multiple academic approaches and traditions interact, but one that is not organized into a discipline of its own. The multiplicity and complexity of different kinds of games, play forms, player motivations and applications for games makes it very hard to precisely define the academic identity of game studies. As interest in games and play studies continues to expand into novel areas of the research community, it is becoming even harder to narrow down and precisely capture what game studies really is. However, this is exactly what a teacher or a curriculum designer needs to be able to do when games are included in the practical agenda of academic education. This short article discusses how this kind of process has been implemented at the University of Tampere (UTA), and some of the key lessons one might learn from game studies at UTA.

The general approach of game studies in Tampere (see below, figure 1) is based on a three-pronged approach featuring game analysis, player research and game design studies, which reflect the goals of scientific research, the nature of

knowledge and the roles of academic practice.[1] The underlying disciplinary framework is based on the combination of perspectives that are derived from the styles of academic thinking and practice found in the research fields of the humanities, social sciences and design.

Figure 1: Multi-perspectival organization of game studies of Tampere



This combination of fundamental orientations has served us well and it reflects the contemporary *intellectual complex* that is responsible for much of the dynamism in this field. According to an international study concerning the educational backgrounds and current disciplinary identities of researchers in game studies,

1 For a seminal text discussing knowledge interests, see: Habermas, Jürgen: *Knowledge & Human Interests*, Boston: Beacon Press 1972.

a large number of game researchers are engaged in multi- or interdisciplinary collaboration; their career paths often lead them to change their orientation in work, e.g. they move to externally funded research projects with applied interests and goals.[2] At the same time, it should be emphasized that the particular form of game studies featured at UTA was partially born out of necessity, partly from historical roots and developments that took place locally, as well as internationally in academia.

The digital media's entrance to the academic agenda took place particularly during the late 1980s and early 1990s, as there was an awakening among university administration to the development of information technology, and personal computers with novel multimedia capabilities were in demand from students and staff for educational purposes. The public discussion and policy setting that was focused on *information society* was one of the factors in this development, which also resulted in the establishment of Hypermedia Laboratory at the University of Tampere in 1992. The *Hyperlab* was at first just a small university service project, and part of the Computing Centre, then it eventually grew into a small academic department of its own. At the same time, and even as early as the late 1980s, the UTA Department of Literature and the Arts was the home for early artistic experimentation with expressive hypermedia, including early experimental interactive hyper-novels made with the Macintosh program HyperCard. Within the department, a young generation of scholars gained theoretically-oriented training that was based in the humanities and aesthetics before they moved on to study of hypermedia, games and other forms of digital creativity as parts of *digital arts and culture*. Much of the theoretical backbone of the UTA approach to game studies was developed within this early circle of digital cultural studies during the 1990s.

CREATING IDENTITY AND CRITICAL MASS

The University of Tampere is one of the largest universities in Finland, with a student population of about 15,000 and 2,000 faculty and staff members. Currently negotiations are underway concerning the merging of UTA with the Tampere University of Technology (TUT) and the Tampere University of Applied

2 Mäyrä, Frans/van Looy, Jan/Quandt, Thorsten: "Disciplinary Identity of Game Scholars: An Outline," in *Proceedings of DiGRA 2013—DeFragging Game Studies*, 2013, http://www.digra.org/wp-content/uploads/digital-library/paper_146.pdf

Sciences (TAMK)—a merger which would bring the UTA total student population to 35,000. UTA is also often ranked as the most popular university in Finland among student applicants, partly due to its central location and the reputation of Tampere as a desired living area and partly due to the longstanding UTA tradition that students are free to combine elements from many secondary subjects (*minors*) into their individual, tailor-made degrees. Provided by the Hyperlab, the courses that focused on numerous fundamental ICT skills (such as the creation of home pages in HTML, or image editing in Photoshop) developed into an increasingly popular minor during the 1990s. In 2002, new media studies became institutionalized as a discipline of its own at the University of Tampere. Called *Hypermedia*, this bachelor-level selection of studies was a combination of design and implementation-oriented courses as well as more theoretical elements that included humanities and social science-approaches to both Internet and game studies.

2002 was also the year UTA's Game Research Lab was officially started. I was appointed as a Professor of Hypermedia and deputy director of the Hypermedia Laboratory, and taking initiative, the Gamelab was a practical way for me and my colleagues to organize key areas of new media research into a more focused institutional entity. The study of games had been a growing part of Hyperlab work since the late 1990s, a point in time when Veikkaus played a role of particular importance to the development of games studies at UTA. Veikkaus is the state-owned company that operates lottery and betting games in Finland in accordance with their mandate to "offer high quality gaming entertainment reliably and responsibly." The need to understand how games in general (not only gambling) were developing in the era of digital media and online connectivity spurred Veikkaus to provide support to early game research projects in Tampere and then to donate partial funding for a new professorship that was shared between UTA and TUT for four years (1999-2003). Partly with the help of this professorship, several new research projects were launched with the expressed aim to bring humanities and human sciences-based approaches into close dialogue with the opportunities and socio-cultural developments associated with new digital technologies.

There were (and still continue to be) very limited resources in the university budget for new educational or research initiatives, so adopting an active and successful strategy to attract external funding was crucial for the UTA Game Research Lab to become a viable research initiative and to develop a knowledgeable staff available for developing the game studies curriculum. Partial funding for the early stages of this development was provided by the local Tampere development program that was implemented from 2001 to 2005. Called

eTampere, it directed the resources of Tampere city and various development funds into initiatives that aimed to bolster the role of the Tampere region in research, development and information society service development. An early game research project titled *Communication and Community in Digital Entertainment Services* received its crucial seed funding from the Information Society Institute, which operated under the eTampere program framework. After that, the necessary building blocks were in place for the game research team to expand their activities with a series of successful research and education project applications, bringing in funding from Tekes (the National Innovation and Technology Agency), the Academy of Finland, the European Union, as well as several additional foundations and ministries. From 2001 to 2016, the UTA Game Research Lab team has secured the funding for, and successfully carried out, 45 unique research and educational projects in total.

REVISING, RESTRUCTURING— AND KEEPING TRUE TO THE VISION

Receiving external funding and being able to do games research or game education on a project-by-project basis, however, is not the long-term solution for the foundation of a scientific or scholarly field. Luckily, the popularity of games and Internet-related courses in Hypermedia grew among students and the university reacted by directing available resources to the new, growing program. The Hypermedia laboratory established a small number of more long-term education and research positions between 2002 and 2004, allowing for a new media education plan with an eye towards the future. It took five years, however, to open up the specialization of game studies as an official degree program. By joining forces with the Information Studies degree program, *Hypermedia* was at first provided as an additional study track for students pursuing the Information Studies degree, and finally, in 2009, a completely new, merged discipline of Information Studies and Interactive Media was established. The interactive media element in this degree program provided students with the option to specialize in either game studies or internet studies, and consequently opened up a full path to pursue a games-focused bachelor's degree, then continue to with a master's degree in game studies. The Information Studies and Interactive Media doctoral program with a games and internet studies track was also established at this time. The first master's degree from the new program was completed in July 2010, and the first PhD defense took place in 2012. However, game-focused PhD projects were carried out prior to 2010, both at UTA as well as at other Finnish uni-

versities. From 1998 to 2012, at least 35 doctoral theses researching games, game design and game play from various perspectives were published in Finland.[3]

The profile and aims of game education have been analyzed and revised multiple times since the establishment of game studies at UTA. In 2004, for example, the core content analysis carried out on the UTA Hypermedia studies concluded that the strength and potential of these studies lie in the combination of perspectives that generates knowledge and understanding of the *use, fundamental character, and potentials* of new media. At this point we decided that the practical, interactive media courses would not be the first in the studies; the basic studies were re-organized to start from more general historical, conceptual and theoretical introductions, and the design and implementation-oriented studies were repositioned as intermediate level studies. As master's and doctoral studies were added to the curriculum in 2008-2009, new courses were designed to focus on multiple research approaches relevant for games and internet studies: research of use and users, research of design and more theoretical and methodological-focused studies (such as critical game analysis, game genre studies, game and player culture studies, analyses of the game industry and the study of games in media culture). In 2013, the revised master's degree program was opened as an English language course of study for international students and Finnish students alike.

After the international master's program had been operating for some time, our team carried out major curricula assessment and reorganization in 2015, which has led to a new course structure, to be implemented in the 2016-2018 period. The aims of internet and game studies education were clarified to primarily focus on educating academic experts in games and new media: Rather than focus on any particular game industry job, the aims of game studies education are anchored in building a comprehensive understanding of how games and earlier established play practices, as well as societal, cultural, technical, aesthetic and technological factors, all contribute to how games are used and produced. Students are expected to combine the skills and knowledge from their UTA game studies education with other academic and professional studies, as well as extra-curricular activities that all contribute to their professional placement. Af-

3 Sotamaa, Olli/Suominen, Jaakko: "Suomalainen pelitutkimus vuosina 1998-2012 julkaistujen peliväitöskirjojen valossa," in: Jaakko Suominen et al. (eds.), *Pelitutkimuksen Vuosikirja*, 2013, http://www.digra.org/wp-content/uploads/digital-library/paper_146.pdf

ter earning a master's degree, some students will continue with doctoral studies in game-related research, and some of those students will pursue an academic career, while most will find employment in the private sector, in museums, libraries, schools and other public institutions, and yet another segment will find work in third sector expert positions (e.g. non-governmental organizations that contribute to game literacy education or to the prevention and treatment of game-related problems).

The key lessons from UTA game education relate in part to collaboration: it is important to explore opportunities for furthering the agenda of game studies together with other disciplines, as interdisciplinary cooperation increases the probability of including games in the institutional agenda to start with. The intimate link between game research and key areas of first-rate education is important, but it is also wise to see research and education as mutually complementary (e.g., the tendencies of research funding may tilt research activities this way or that—but the historical and theoretical backbone of education should not change according to the current trends in science funding). Also, the combination of game studies with studies in other fields, such as computer science, information and library studies, psychology, or journalism, will increase the employability of students as they graduate and enter the work force. Of course, maintaining and keeping true to the core identity of game studies as a study of games (and their *gameness*—what is truly at the heart of their unique character as games) is also very important and the only way that the long-term vision and potential of game studies within the various fields of scholarship will thrive and reach academic maturity.

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Sotamaa, Olli/Suominen, Jaakko: "Suomalainen pelitutkimus vuosina 1998-2012 julkaistujen peliväitöskirjojen valossa," in: Jaakko Suominen et al. (eds.), *Pelitutkimuksen Vuosikirja*, 2013, online available at http://www.digra.org/wp-content/uploads/digital-library/paper_146.pdf

II.2 Media Pedagogy and Media Ethics Summit

Introduction

ANGELA TILLMANN, ANDRÉ WESSEL

Nowadays, digital games are not only perceived as entertainment, but also as a valid medium of education, and their pedagogic capacity has opened up new paths for media education in many different areas. Digital games are used in various educational and learning contexts, for example to encourage young people to develop socially responsible, critical, and reflexive media usage, to motivate them to move beyond their routines in their media activity, to be creative in their use of games, and to engage in gaming communities, or simply to learn about math, natural sciences, history, or politics. In recent years, an increasing number of digital games also try to raise player awareness of ethical questions by implementing ethical issues and moral decision-making into gameplay and/or narration. This includes all kinds of digital games, from serious games to entertainment games and from independent games to AAA titles. Some of them task players to decide the fate of blameless in-game characters, making them choose who shall live and who shall die. Some aim to give an insight into the problematic aspects of fast food chains and smartphone companies. Some try to sensitize players to the challenges of flight, migration, and the numerous difficulties refugees endure.

Given these facts, we decided to name the summit *Ethics in Games* in 2015, opening up a space for discussion about the various aspects of the topic. However, the relation between ethics and digital games is not only limited to in-game aspects. Our 2016 summit "Digital Games as Social Environments" took into account the myriad opportunities to interact socially with others offered by virtual worlds. Whether playing together on a PC or home console, playing online with friends and strangers alike, or participating in esports events as spectators and contestants, digital games provide us with fertile ground for countless offline- and online-communities with unique social dynamics and rules, raising

many questions about the ethical specifics of these new social environments that are revealed when you have a closer look at player behaviour, communication, and participation, among others.

Many different topics were brought into discussion by the contributors to our Media Pedagogy/Media Ethics Summits in the past two years. The first contribution comes from Angelika Beranek and Sebastian Ring. Dealing with digital gaming worlds and their structures with regard to potentials for participation of adolescent video gamers, the authors develop a stage model of participation in digital gaming worlds. An empirical study about the potential of digital games for the reflection of moral action forms the basis of André Weßel's article. He uses the game THIS WAR OF MINE[1] to develop a research setting which may also serve as a model for teaching learning arrangements simultaneously. Sonja Gabriel takes a closer look at serious games and focusses on how narration, characters, and player choice are used to make players think about the moral decisions they make when playing. Jeffrey Wimmer answers the question if moral dilemmas embedded in gameplay can potentially sensitize gamers in respect to real-world moral dilemmas and therefore stimulate ethical reflection. Illuminating the topic of digital games being used as a tool for moral education, Maike Groen and André Weßel explain some essential pedagogical goals and strategies and give some examples for their practical use. Arno Görgen discusses the ludonarrative representations of biotic artifacts like anthropogenic chimeras, mutants, and pandemies in digital games, including their moral status in relation to the playing subject, their fictional creators, and themselves.

The augmented reality game POKÉMON GO[2] is examined by Christian Toth who aims to address aspects of reality perception as well as how social environments are created by players and can be made use of in contexts of social organizations and education. Using a research project on agency and mediality in Massively Multiplayer Online Role-Playing Games (MMORPGs), particularly WORLD OF WARCRAFT,[3] as an example, Arne Schröder investigates different aspects of spatiality in online role-playing games in terms of their social significance and the interrelations between different types of game space. Taking the perspective that all human interactions—with other people, objects, and spaces—are social in nature, Kelly Boudreau discusses different aspects of sociality in single-player games including player engagement with AI, the game's envi-

1 THIS WAR OF MINE (Deep Silver 2014, ●: 11bit studios)

2 POKÉMON GO (Niantic 2016, ●: Niantic)

3 WORLD OF WARCRAFT (Blizzard Entertainment 2004, ●: Blizzard Entertainment)

ronment, narrative, and play context, all which shape a player's social understanding of a game. The various forms and the potential regulation of unfair play directly related to the players and not to their avatars in competetive online games is the topic of Thomas West's contribution. Emma Witkowski writes about the rising phenomenon of esports, mainly addressing the changing esports ecosystem from the perspective of players and the liveliness of their practice—how they play, how they think of performance, and what it means for them to play to win. And finally, Ute Barbara Schilly explores about the fascination of watching other people play digital games in online streams. She examines the talking of gamers in Let's Play videos from the perspective of conversation analysis.

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THIS WAR OF MINE (Deep Silver 2014, O: 11bit studios)

WORLD OF WARCRAFT (Blizzard Entertainment 2004, O: Blizzard Entertainment)

Not Just a Game

Media Activity in Digital Gaming Worlds as a Preliminary Stage of Participation[1]

ANGELIKA BERANEK, SEBASTIAN RING

This article deals with digital gaming worlds and their structures with regard to potentials for participation available to adolescent video gamers. In order to develop a better understanding of educational needs for action in both facilitating engagement within digital gaming worlds and relevant skills for participation as well as requirements regarding the design of digital games and game-related communication platforms, the authors develop a stage model of participation in digital gaming worlds. They define participation not only as political action but also include the ability to modify and influence digital gaming worlds as an opportunity for participating in these worlds.

1 DIGITAL GAMING WORLDS

Computer games are software applications operated via the computer, game console, smartphone or tablet as well as web-enabled puppet or other interactive devices. Digital games can thereby be characterized as software-based control systems that enable and encourage gameplay that often includes narrative ele-

1 A similar version of this article was first published in German: Beranek, Angelika/ Ring, Sebastian: *Nicht nur Spiel—Medienhandeln in digitalen Spielwelten als Vorstufe zu Partizipation*, merz Wissenschaft 60 (2016), pp. 22-32.

ments, generates fictional worlds and simultaneously teaches rules.[2] Compared to other virtual realities and online communication platforms, digital games display formal features of gameplay.[3] Cultural anthropologically speaking,[4] a game turns into a game when people use the software to play and perceive or address their action as playing. The past decades have produced a large variety of software, gaming equipment and genres that partly capture and further develop classic gaming systems and their formal structures, but also specifically create innovative opportunities for actions and interactions. From a communication science perspective, computer games, apart from their status as a game, can be characterized as mass media[5] as well as communication and social platforms[6] with and in which players can act.

In addition to immediate game structures—albeit often closely linked on a structural level—further areas of action exist that, from an educational media perspective and with regard to participation in digital gaming worlds, are of high relevance for young gamers: Communication tools of the convergent media world such as forums, communities, clans, journalistic websites, distribution platforms such as Steam, streaming platforms such as Twitch, chat platforms such as Teamspeak, Let's Play videos and more. Therefore, the complex structure of digital gaming worlds can be described as a location on the one hand and as the subject of communication via media on the other. Such symbolic and interactive action is performed with different intentions—for instance to play or socially interact in some other way. Interaction is thereby directed towards various goals and objects, including the game itself, other participants such as game

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

3 Jörissen, Benjamin: "Strukturale Ethnografie virtueller Welten," in: Petra Grell/Winfried Marotzki/Heidi Schelhowe (eds.), *Neue digitale Kultur- und Bildungsräume,* Wiesbaden: VS Verlag für Sozialwissenschaften 2010, pp. 119-144.

4 Huizinga, Johan: *Homo ludens: Vom Ursprung der Kultur im Spiel,* Hamburg: Rowohlt 1956, p. 34.

5 Krotz, Friedrich: "Computerspiele als neuer Kommunikationstypus. Interaktive Kommunikation als Zugang zu komplexen Welten," in: Thorsten Quandt/Jeffrey Wimmer/Jens Wolling(eds.), *Die Computerspieler. Studien zur Nutzung von Computergames,* 2nd edition, Wiesbaden: VS Verlag für Sozialwissenschaften 2009, pp. 25-40.

6 Kuhn, Axel: "Der virtuelle Sozialraum digitaler Spielwelten. Struktur und Auswirkungen auf das Spielerleben," in: Winfred Kaminski/Martin Lorber (eds.), *Computerspiele: Medien und mehr…*, München: kopaed 2010, pp. 129-146.

designers or specific players as well as the gaming community on an abstract level. Furthermore, interaction can address different game-related or non-game-related topics.

The range of media services are aimed at receptive, productive and socially interactive interests (for more on the supply structure of the social web from an adolescent viewpoint, compare Brügge and Wagner, 2013, p.111). Communication platforms, especially, often connect these three fields. In addition to content produced under professional conditions (such as media-related services in magazines or LET'S PLAY videos of established YouTubers), one can find user generated content. Consalvo emphasizes the normative relevance of this "paratext"[7] for the assessment of digital games and playing behavior. Furthermore, it is possible for players to help shape game-related dialogue by publishing their own work (self-designed games, fanart, etc.). Last but not least, the social web provides interaction areas for different forms of social interaction and communities. Social web platforms enable information transfer as well as communication and the organization of gaming communities such as clans or guilds. Digital gaming worlds are shaped and structured by a number of people and institutional players to become a communication forum that players can interact with and participate in. These include political players that define the legal conditions, game designers largely responsible for the content and structural design of the games, as well as publishers and platform operators in charge of marketing and distribution structures. Their actions are driven by different objectives and principles. Therefore, various areas of responsibility arise.[8]

Participation opportunities for adolescents in digital gaming worlds are defined by these framework conditions. However, the interests, motivation and competencies of gamers have a considerable influence as well. For some time now, media impact research no longer assumes a linear impact of media, but instead has focused on user motives and needs (Uses-and-Gratification-

7 Consalvo, Mia: *Cheating. Gaining Advantage in Videogames*, Cambridge: MIT Press 2007.

8 Ring, Sebastian/Funiok, Rüdiger: "Harmloses Als-Ob, nützliches Lebenstraining, problematische Menschenbilder—Braucht es eigene ethische Maximen für Computerspiele?" in: Marlies Prinzing/Matthias Rath/Christian Schicha/Ingrid Stapf (eds.), *Neuvermessung der Medienethik,* Weinheim und Basel: Beltz 2015, p. 180.

Approach) concerning media use.[9] Furthermore, there is a complex interaction process between game content and the everyday life of gamers. On a micro level media usage is associated with everyday experiences, on a macro level with advanced social or cultural transformation processes.[10] According to this extended contextualized and culture-oriented analysis perspective, computer game usage is embedded in its individual original, current and future context.[11]

From an interactionistic perspective, however, the players themselves are viewed as active subjects that, given their specific living situation, try to interpret and grasp the meaning of media contents, structures of game systems and the actions of other players. In accordance with this interactionistic understanding of media communication, media literate behavior aims at participating in social processes via communication: Communicative competence is equivalent to the ability to communicate self-determinedly as well as reflectively and critically. It forms the basis for active influence on, and the changing of, reality.[12] The dimension of action specified herein amounts to an active, reflexive and practical way for adolescents to acquire media knowledge. When regarding digital gaming worlds as means of communication as well as communication forums, certain subject-related demands emerge.[13] The opportunities to actively participate in designing digital gaming worlds are determined by two factors: by players' media competency on the one hand and the structures of digital games on the other.

In the following, the structures of digital gaming worlds as gaming and interaction areas that frame the discourse and chances for participation will be analyzed. Subsequently, a stage model of participation in digital gaming worlds,

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9 Hugger, Kai-Uwe: "Uses-and-Gratification-Approach und Nutzenansatz," in: Uwe Sander/Friederike von Gross/Kai-Uwe Hugger (eds.), *Handbuch Medienpädagogik*, Wiesbaden: VS Verlag für Sozialwissenschaften 2008, pp. 173ff.

10 Wimmer, Jeffrey: "Kontextualisierung versus Komplexitätsreduktion. Medienwirkung aus kulturtheoretischer Perspektive," in: Wolfgang Schweiger/Andreas Fahr (eds.), *Handbuch Medienwirkungsforschung*, Wiesbaden: Springer 2013, p. 119.

11 Wimmer, Jeffrey: *Massenphänomen Computerspiele: Soziale, kulturelle und wirtschaftliche Aspekte*, Konstanz: UVK Verlagsgesellschaft 2013, p. 81.

12 Theunert, Helga: "Medienkompetenz," in: Bernd Schorb/Günther Anfang/Kathrin Demmler (eds.), *Grundbegriffe Medienpädagogik, Praxis*, München: kopaed 2009, p. 200.

13 Gebel, Christa: "Kompetenz erspielen—kompetent spielen?" in: *merz | medien + erziehung*, 4 (2010), pp. 45-50.

based on the stage models of participation by Schröder[14] and Hart,[15] the adaptations by Stange[16] and Wagner, Gerlicher and Brüggen[17] as well as Soßdorf,[18] will be developed. This should generate a better understanding of practical chances for and limitations of participation in digital gaming worlds as well as describe educational approaches.

2 PARTICIPATION-RELATED STRUCTURAL CHARACTERISTICS OF DIGITAL GAMING WORLDS

The qualitative diversity of digital games popular amongst adolescents offers a wide variety of possibilities as well as limitations. As digital games are embedded in the convergent media world like scarcely any other medium, there is a multitude of options to manipulate the game beyond the intentions of the developers, such as hacks, modding or using external communication tools like TEAMSPEAK or SKYPE.

Furthermore, normative functions of game-related content exist (magazines, LET'S PLAY videos, discussion forums, etc.). However, the focus here should initially be on game structures. To differentiate them according to their usefulness for the participation process, it is worth taking a closer look at the characteristics necessary for structuring interaction.

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14 Schröder, Richard: *Kinder reden mit*, Weinheim: Beltz 1995.

15 Hart, Roger: *Children's Participation. The Theory and Practice of Involving Young Citizens in Community Development and Environmental Care*, Reprinted, New York, 1997.

16 Stange, Waldemar: "Was ist Partizipation? Definitionen—Systematisierungen," *Baustein A 1.1. 2007*; www.kinderpolitik.de/beteiligungsbausteine/pdf/a/Baustein_A_1_1.pdf

17 Wagner, Ulrike/Gerlicher, Peter/Brüggen, Niels: "Partizipation im und mit dem Social Web—Herausforderungen für die politische Bildung. Expertise für die Bundeszentrale für politische Bildung," 2011; www.jff.de/jff/index.php?id=74&type=0&jumpurl=uploads%2Fmedia%2FExpertise_Partizipation_Im_Social_Web_01.pdf&juSecure=1&locationData=74%3Att_content%3A428&juHash=4ea7a96e2471ad2a47a1ffa549af0f29ca269b13

18 Soßdorf, Anna: *Zwischen Like-Button und Parteibuch. Die Rolle des Internets in der politischen Partizipation Jugendlicher*, Wiesbaden: Springer VS 2016.

- Admission requirements: The first issue to tackle is assessing the possibility of participating in the game. This requires certain technical conditions such as necessary hardware or software, an internet connection, etc. These are often associated with economic conditions. However, personal conditions, such as a specific age or the development of skills and abilities are factors that determine the possibility of participating in the game as well. Social factors play a particularly decisive role here if, for example, the game design mainly addresses a certain social group, or an existing community integrates or excludes new members.
- Transparency: To help shape the framework conditions of one's own game requires knowledge of existing structures, developmental processes and opportunities of participation. This, for example, also refers to the collection, storage and processing of data, used to analyze gaming behavior and adjust game mechanisms.[19] To help shape these adjustment processes, knowledge of the algorithms and quality management tools is relevant.
- Game design: Generally, developers define the narration and control systems the players operate. In terms of participation, one important structural feature of digital games is the possibility for players to help design the game. This may take place on two different levels: Within the given framework of the game design or the platforms (e.g. via role-plays or specific game arrangements) or by co-creating this framework (e.g. by level editors, cheating, modding, hacking or by a closer conceptual involvement in the game design as can be found in Steam-Workshops). Of course, the players must have certain skills and abilities to help design games. However, the game structures must fulfill certain conditions to enable, encourage or hinder participation, as well. Hereby limitations arise not only due to technical conditions but also due to license regulations.
- Interpersonal communication and relationships: On the one hand, they take place amongst the players: This raises the issue of communication forms and areas (e.g. forums, chats or voice chats) used before, during and after play. The gaming communities can be organized in different ways, loosely and situational or stable with formalized structures (for instance in the form of clans or guilds). Hierarchies, various roles or forms of involvement (e.g. server administrators or support) may exist. On the other hand, there is inter-

19 Piasecki, Stefan: "Kondensstreifen der Online-Sozialisation. Videospiele als Zuträger von persönlichen Informationen und Verhaltensparametern," in: *merz | medien + erziehung* 1 (2015), pp. 45-52.

action between players and developers or operators: this triggers the issue of communication possibilities and their structures. Do participation tools exist that enable player involvement in the developmental processes? Do player demands actually influence the development of games or is this potentiality merely a marketing tool?

- Normative Processes: Especially in multi-player games, game and community-related values, rules and norms emerge and evolve via player interaction. However, who essentially shapes and moderates these processes? Can players influence the rules of the game or the sanctions related to breaking said rules? Are there democratic elements, structures enabling the community to manage itself (e.g. peer tribunals) or is the gaming operator always responsible for controlling social and normative issues?

3 LEVELS OF PARTICIPATION

Digital gaming worlds, used as communication and social areas, are actively co-created and shaped by the players. The structural framework conditions determine various degrees of participation subsequently described in a stage model. Although a vast amount of literature concerning adolescent participation exists, it is difficult to assess the adolescent perspective itself. Generally, the educational issue of how to create opportunities for participation is discussed. But why should it even occur to adolescents to take part and at what point is it referred to as (political) participation? The best participation opportunities are worthless if adolescents view them as useless. As playing computer games is usually a voluntary and not pedagogically initiated or supervised form of participation is of fundamental importance. To approach the general issues concerning the motives and intentions of participation, psychological, sociological and educational perspectives are taken into account. However, when using an adolescent's point of view as the central perspective on participation in digital gaming worlds, the following questions arise.

3.1 Participation Terminology

Firstly, the term 'participation' must be examined. Participation is often referred to as involvement or engagement. Usually this term is associated with participa-

tion in political processes. Authors such as Widmaier[20] even claim that the term participation is exclusively reserved for the political sector. In other recent publications one can find a broader understanding of political participation among adolescents. These publications emphasize the adolescent's perspective and go beyond the participation procedures initiated by politicians. Soßdorf[21] summarizes the recent discussion. Wimmer, for example, illustrates that internet participation cannot be solely considered as transfer of classical participation forms into the virtual world.[22] He claims that these adapted opportunities for participation have a top-down orientation that does not offer the user sufficient codetermination and transparency. According to Wimmer, the activities developed and initiated by the user himself are typical new forms of digital deliberation and participation. These activities have a bottom-up orientation and blur the line between online and offline.[23] This can broaden the understanding of adolescent participation. Adolescents are not politically inactive but involved on different levels. Krüger notes that adolescents are certainly committed participants. They are dedicated to matters concerning their surroundings, to things that move and touch them and if they are convinced their dedication is worthwhile.[24]

Wagner et al.[25] also describe this broader understanding of participation involving adolescents and online communication: Adolescents learn to understand participatory forms of interaction as opportunities to broaden their repertoire of action step-by-step and simultaneously become aware of different areas of social relations. Given this fact, one must apply this term in a manner that is not too closely based on political participation. Instead, educational work involves creating participation opportunities for children and adolescents and making it possible to experience and thus develop participation and self-determination.

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20 Widmaier, Benedikt: "Von der Politikverdrossenheit zmn Wutbürger? Partizipation als Ziel der politischen Bildung," in: Benedikt Widmaier/Frank Nonnenmacher (eds.), *Partizipation als Bildungsziel. Politische Aktion in der politischen Bildung*, Schwalbach/Ts.: Wochenschau 2011, pp. 7-15.

21 A. Soßdorf, *Zwischen Like-Button und Parteibuch*, p. 41.

22 J. Wimmer: "Kontextualisierung versus Komplexitätsreduktion," p. 31.

23 Ibid., p. 27.

24 Krüger, Thomas: "Politische Bildung online—Wege zur Partizipation Jugendlicher?" in: Helga Theunert/Ulrike Wagner (eds.), *Alles auf dem Schirm? Jugendliche in vernetzten Informationswelten*, München: kopaed 2011, p. 140.

25 U. Wagner et al.: "Partizipation im und mit dem Social Web," pp.2ff.

This subject-oriented approach is also the basis for our reflections on participation in digital gaming worlds. It involves the participation in designing one's own environment with close reference to current interests of adolescents, which include digital games. Therefore, the potential for the establishment of such participation areas for adolescents develops due to educational offerings; however, digital gaming worlds can contribute as well. Studies addressing the factors that motivate adolescents to become politically active could show that previous participation experience had a positive effect, if the experience was satisfying.[26] The consideration of different environments and social contexts such as the family in regards to the development of pre-political participation-relevant competencies is found in Weiss[27] and extended in Oser et al. (2000).[28] The political socialization model by Weiss includes the environmental dimension within the framework of secondary socialization. Political competence evolves later in life within secondary socialization based on previously developed social and self-competencies whereby corresponding socialization processes come into effect. This means that interaction processes occurring in relationships, experiences and conversations between people in their different environments, provide the concrete foundation for these socialization processes. This is crucial not only for the general development of the personality but also for the development of political skills.[29] To date, this environment includes digital gaming worlds acting as communication and social areas.

Participation in digital games can therefore encourage later willingness to participate in political life, but also turn into political action itself. Thus, a political initiative to change certain guidelines caused by a player's frustration with the guidelines for youth protection could emerge or—thinking on a smaller scale—a project relevant to computer games involving local politicians at one's school might be instigated.

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26 Fatke, Reinhard/Schneider, Helmut: *Kinder- und Jugendpartizipation in Deutschland. Daten, Fakten, Perspektiven,* Gütersloh: Verlag Bertelsmann Stiftung 2005, pp. 6.

27 Weiss, Wolfgang W.: "Überlegungen für ein theoretisches Modell politischer Sozialisation," in Hans-Dieter Klingemann/Max Kaase (eds.), *Politische Psychologie,* Opladen: Westdeutscher Verlag 1981, pp. 37-55.

28 Oser, Fritz, et al.: *Partizipationserfahrungen und individuelle Kompetenzen. Literaturbericht und Vorschläge für eine empirische Untersuchung im Rahmen des Projekts "Education à la Citoyenneté Democratique (ECD)" des Europarats,* 2000, Universität Fribourg; edudoc.ch/record/29371/files/249.pdf

29 Ibid.

Transferring the participation experience gained in digital gaming worlds to non-game-related political processes must be actively accomplished by adolescents. This step is influenced by various factors. To what extent these can be transferred to the real world in terms of an intermondial transfer depends on whether and how far they must be abstracted to allow similar experiences.[30] We are primarily interested in the possibilities of designing one's own reality and therefore approaches to participation in terms of political involvement.

3.2 Motivation for Participation

Influencing factors that facilitate or inhibit political participation have often been evaluated in the literature.

However, the fundamental question of why adolescents even want to participate often remains unanswered. When looking at this question from the perspective of educational practice, it rapidly becomes clear that a high level of commitment arises when adolescents are directly confronted with a personal problem or external incentives for participation are in place. This is reflected in the research on influencing factors insofar as three factors relevant for adolescents, amongst many other parameters, could be identified. These include the influence of the social environment, one's own affectedness and the adolescent's identity work.

Soßdorf summarizes various influencing factors and motives of political participation and preconditions for the engagement of adolescents.[31] These also entail the living environment and one's own affectedness, as well as involvement in a social network of friends and family linked by mutual interests and enthusiasm for political topics. Moreover, the topics of self-efficacy, appreciation, affectedness and the broadening of one's horizon are frequently named[32] in reference to adolescent identity work.

In terms of digital gaming worlds, the following questions arise. Where can adolescents participate in digital gaming worlds and do they want to? Furthermore, at what stage are adolescents invited to participate?

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30 Fritz, Jürgen: "Wie Computerspieler ins Spiel kommen, Theorien und Modelle zur Nutzung und Wirkung virtueller Spielwelten," in: lfm (eds.), *Schriftenreihe Medienforschung der Landesanstalt für Medien Nordrhein-Westfalen*, Band 67, Berlin: Vistas Verlag GmbH 2011, p. 93.

31 A. Soßdorf: *Zwischen Like-Button und Parteibuch*, p. 57.

32 Ibid., p. 63.

3.3 Levels of Participation Regarding Digital Gaming Worlds

To outline participation opportunities, one must describe levels of participation in various contexts.

Two different approaches can be followed here. The Schröder/Hart model, for example, divides the institutional opportunities for participation into different levels based on formal participation possibilities.[33] Experts of the JFF on participation in and with the social web differentiate between participation, co-determination and self-determination.[34] In Soßdorf's opinion, the subject is active. Accordingly, Soßdorf distinguishes the activity levels of the adolescent from mere informing/consuming to participating/interacting to initiating/producing activities.[35] This classification is found in the first column of table 1. The second column consist of the models adapted by Schröder,[36] Hart[37] and Wagner et al.[38] as well as additions from the authors. In the following columns, the models are transferred to digital gaming worlds and illustrated with examples and activities. Subsequently, these models are used to describe different levels of participation in digital gaming worlds.

To get an idea of where participation opportunities exist, the following distinction based on the previously named models has been made. The first four levels, strictly speaking, do not entail active participation—these are regarded as preliminary stages and preconditions for participation in gaming worlds. As of level 5 one can refer to participation. Table 1 shows the stage model of participation in digital gaming worlds including examples of activities for gamers on the one hand and framework conditions providers can create on the other.

The lowest level contains information and consumption. Regarding the classic participation processes available (e.g. in youth work), this would entail informing oneself about offers provided by youth work and taking advantage of them. In terms of gaming worlds, gamer activities initially include informing themselves about the game. Subsequently, buying and playing a game are the first steps towards participation. Outside of the game, one could get information about offers from LET'S PLAY videos or by asking friends about the game. Pub-

33 R. Schröder: *Kinder reden mit*; R. Hart: *Children's Participation*.

34 U. Wagner et al.: "Partizipationim nndmit dem Social Web."

35 A. Soßdorf: *Zwischen Like-Button und Parteibuch*, p. 174.

36 R. Schröder: *Kinder reden mit*.

37 R. Hart: *Children's Participation*.

38 U. Wagner et al.: "Partizipationim nndmit dem Social Web."

lishers must provide the appropriate information about the game to allow such activities.

The second level involves adopting a position towards a game. In the traditional sense of the term, this might be comparable to engaging in a specific social environment in a youth club and identifying with a youth center and its visitors. Within a game, positioning occurs by identifying oneself as a gamer in a specific game. Outside of the game, this happens by identifying oneself with a game played in one's circle of friends or the general public. In addition to simple communication, this can be expressed by buying promotional material as well. Aside from tools, publishers provide other materials (often used for merchandising) that gamers can buy and use for their own purposes.

The third level includes active participation. At a youth club, this would entail participation in the courses offered. In a game, this is expressed by establishing social relationships or participating in joint (multiplayer-)games. Outside of the game, one can participate in forum discussions of other platforms or one can like, share or comment on *YouTube* videos relevant to the game. Providers can supply community functions or initiate surveys that players can fill out.

Tab. 1: Levels of participation in digital gaming worlds

		Gamer Activities		Provider Activities
Levels		Within the game / gaming community	Outside the game	Activities supporting participation
Inform/consume	**Level 1 Information / consumption**	Inform oneself about games; buy games, play games	Consume *Let's Play* videos or similar things concerning the game; ask friends for their opinion about the game	Provide information about the game
	Level 2 Positioning / Association	Engage in a game, Involvement	To out/identify oneself as a gamer, buy promotional material	Offer tools and materials

Participate/interact	**Level 3 Participation**	Engage in social relationships (make friends, follow game invitations, clan membership)	Participate in forum discussions; like and share *YouTube* videos, comment and discuss *YouTube* videos	Supply community functions, initiate surveys
	Level 4 Active participation	Actively participate in the community (in a clan, take part in discussions, voice concerns, e.g. write to the support or community manager)		Community maintenance
Initiate/Produce	**Level 5 Action**	Accept functional roles in a clan, initiate activities, initiate own participation processes; (start discussions in forums)	Create and publish own videos and fanart, Initiate activities outside of the game, e.g. votes	Invite community to start own activities; provide legal and technical requirements
	Level 6 Modification / Production	Create content (e.g. *Steam* workshops); hacking, modding; form a clan; establish own game server, game or team speak; design own games	e.g. sub-forum on community webpage	Release source code, allow modifications, provide workshops

On a fourth level one can find active participation in the digital gaming world. In terms of a youth club, this would equate to making suggestions for joint activities. Within a gaming environment, this is demonstrated by actively participating in the gaming community or writing to the support teams or community management. Outside the game, YouTube videos and the like can be used to actively express one's own opinion. Good community maintenance must be part of the provider's tasks.

The fifth level represents real participation in digital gaming worlds. It is characterized by the action of the gamer. In regards to youth work, this would entail offering suggestions for change. Within the game, the situation is similar:

One introduces opportunities for participation such as fan websites or accepts a functional role in a clan. Actions outside of the game can include publication of LET'S PLAY videos or self-made fanart. Furthermore, activities outside of the game are initiated. Providers can encourage these activities by inviting the community to establish events of their own. Likewise, an appropriate legal framework must be created to ensure that players can legally create LET'S PLAY videos or fanart, for example.

The sixth level of participation involves modification of the gaming world and environment as well as gamer productions. Concerning youth work, this would involve establishing one's own youth club. In the gaming world, this includes creating one's own content, producing a mod[39] or forming a clan. The potential activities may also include the development of a game server or designing one's own game. Outside the game, players can operate their own forum or create a sub-forum on a discussion site. The publisher can contribute on this level by encouraging such modifications (e.g. as seen in Steam-Workshops). Additionally, legal and technical preconditions must be created: modding a game must be permitted and the appropriate files and source codes must be available for free.

4 EDUCATIONAL IMPACT

In terms of digital gaming worlds, participation processes can take place in various ways and on different levels. Participation research has shown that early (successful) experience in participation positively influences the willingness to contribute later in life and become politically active (see 3.1 and 3.2). Particularly game and environment-related opportunities for participation offer numerous possibilities for active (media) educational work.

Digital gaming worlds can be an opportunity for adolescents to experience participation in terms of this broader participation concept. Their social structure, realistic representation, activation of intrinsic motivation and the possibility to engage in different levels of participation processes or initiating them bottom-up, offer ample opportunities for political education. Whether these opportunities lead to actual participatory experiences, whether these experiences are successful

39 Unger, Alexander: "Modding as Part of Game Culture. A Handbook of Digital Games Studies," in: Johannes Fronune/Alexander Unger (eds.), *Computer Games and New Media Cultures*, Dordrecht, New York: Springer 2012, pp. 509-523.

and whether a transfer to other social contexts can take place, depends on different factors: the structure of digital gaming worlds, the skills and abilities of the players, the structures of other political participation programs and, last but not least, educational programs.

Approaches to educational practice could focus on utilizing computer games as means to experience self-efficacy and political education processes. This, on the one hand, includes raising the player's awareness for successful participation experiences in digital games and identifying chances of transfer into other social contexts. Game-related competencies among adolescents can emerge in other social contexts, so long it is possible to connect gaming worlds and everyday life. On the other hand, it is imported to encourage and facilitate participation in designing digital gaming and communication worlds, involvement in the gaming community and game-related discussions about one's values.

In addition to the support of participation in digital gaming worlds by educational practice, game and platform operators must provide the appropriate conditions. This includes creating effective participation opportunities. To enable and facilitate genuine participation, transparency regarding the design and decision making process as well as ensuring that the player's decisions and actions have an actual effect, are of the utmost importance. Contacts on the operator's side and age-appropriate community structures for communication and networking facilitate interaction. The demand for player self-determination also relates to economic interests on the side of the game and platform operators. However, creative and economic interests may conflict with the demand for the self-determination of the player or gaming community. Therefore, it is essential to establish transparency, for instance regarding the storage and evaluation of data. Moreover, game manufacturers and operators could encourage player participation interests and ambitions by reducing limitations and creating appropriate legal and technical conditions. This in turn could enable, and even help, players to show self-determination and initiative.

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This Moral of Mine

Reflecting Ethical Decision-Making with Digital Games[1]

ANDRÉ WESSEL

1 INTRODUCTION

Everyday experience from media pedagogical practice shows that, even in 2017, social acceptance of digital games is far from universal. Particularly those who have little personal experience with games still tend to want to "protect" youth from their influence. They assume that games not only lead to aggressiveness, violence and addiction, but are also implicated in social isolation and declining school performance. Though perception of positive aspects is growing, it remains comparatively rare. Thus, the concepts of ethics and morality in digital gaming are addressed in an equally protectionist way in the context of media pedagogy. Letting young people play violent games, the argument runs, is ethically unjustifiable since it not only endangers their personal development, but also contributes to the moral decay of society at large. Despite a persistent lack of consistent scientific evidence supporting them,[2] such claims are still tenacious in public discourse.

1 A similar version of this article was first published in German: Weßel, André: "Ethik und Games: Möglichkeiten digitaler Spiele zur Reflexion moralischen Handelns," in: *merz Wissenschaft* 60 (2016), pp. 123-34.

2 "Scholars' Open Statement to the APA Task Force on Violent Media," delivered to the APA Task Force, September 26, 2013, accessed February 17, 2017, https://de.scribd.com/doc/223284732/Scholar-s-Open-Letter-to-the-APA-Task-Force-On-Violent-Media-Opposing-APA-Policy-Statements-on-Violent-Media#scribd; Bowman, Nico-

Regardless of the above, digital games are gradually becoming a ubiquitous source of entertainment; particularly in the lives of young people, they already are. In Germany, about two thirds of all 12 to 19-year-olds—over 80% among teenage males—play daily or several times a week, whether at home or commuting.[3] Evidence of the power of this growth is, for example, the cross-media hype achieved by the game *Pokémon Go*[4] in the summer of 2016. Such publicity had previously been reserved for blockbuster movies such as STAR WARS: THE FORCE AWAKENS.[5] Thus, it seems quite understandable that after the information era in the 20th century, the 21st century is being called the "ludic century"[6] and a possible "golden age"[7] for digital games. But even though they have long established their place in the entertainment industry and their core demographic has reached far beyond adolescents,[8] relatively little truly instructive and revealing pedagogic research has been done on digital games.[9] Their (informal) learning

las D.: "The Rise (and Refinement) of Moral Panic," in: Rachel Kowert/Thorsten Quandt (eds.), *The Video Game Debate: Unravelling the Physical, Social, and Psychological Effects of Digital Games*, New York/London: Routledge 2016, pp. 22-38; J. Ferguson, Christopher: "Does Media Violence Predict Societal Violence? It Depends on What You Look at and When", in: *Journal of Communication 65* (2015), pp. 1-22.

3 Medienpädagogischer Forschungsverbund Südwest: *JIM-Studie 2016: Jugend, Information, (Multi-) Media [JIM Study 2016: Youth, Information*, (Multi-) Media], accessed February 17, 2017, https://www.mpfs.de/fileadmin/files/Studien/JIM/2016/JIM_Studie_2016.pdf

4 POKÉMON GO (The Pokémon Company 2016, ●: Niantic)

5 STAR WARS: THE FORCE AWAKENS (USA 2015, R: Jeffrey Jacob Abrams)

6 Zimmerman, Eric/Chaplin, Heather: "Manifesto. The 21st Century Will Be Defined by Games," accessed February 17, 2017, http://kotaku.com/manifesto-the-21st-century-will-be-defined-by-games-1275355204.

7 Sicart, Miguel: *Beyond Choices: the Design of Ethical Gameplay*, Cambridge, Mass.: MIT Press 2013, p. 3.

8 "Entertainment Software Association, Essential Facts about the Computer and Video Game Industry", accessed February 17, 2017, http://essentialfacts.theesa.com/Essential-Facts-2016.pdf

9 Sherry, John L.: "Debating How to Learn from Video Games," in: Rachel Kowert/Thorsten Quandt (eds.), *The Video Game Debate: Unravelling the Physical, Social, and Psychological Effects of Digital Games*, New York/London: Routledge 2016, pp. 116-130.

and educational potential that has often been investigated in other media has not been very well illustrated yet.

However, times are changing slowly but surely. Granic, Lobel, and Engels[10] have summarized the research that has recently been done on the potential benefits of playing video games in terms of acquiring important cognitive, emotional, and social competencies, and their results justify that for several years now, digital games have increasingly entered education practice in formal and non-formal contexts alike. However, the possibility of playing digital games in order to ethically reflect on moral action has largely been ignored, even as over the past ten to fifteen years, an increasing number of games provide moral decision-making scenarios at the narrative or ludic level and are therefore suited to raise ethical questions. Independent games are well-known for their capacity to promote learning and educational processes. Indeed, some of them are already developed with the intention of knowledge transfer and labelled as serious games, or (social) impact games. Examples include technically rather simple productions from developers such as Take Action Games (e.g. DARFUR IS DYING[11]; REPLAY: FINDING ZOE[12]), La Molleindustria (e.g. MCDONALD'S VIDEO GAME[13]; PHONE STORY[14]) and Anna Anthropy (e.g. MIGHTY JILL OFF[15]; DYS4IA[16]). These games intentionally address meaningful ethical issues such as transsexualism, responsible consumer behaviour or equality within interpersonal relationships, trying to sensitize the players and influence their conduct. But also commercial off-the-shelf games, originally intended for leisure use, can be effective in triggering learning processes. In games such as the THE LAST OF US[17] or in the latest iterations of game series such as DRAGON AGE[18] or THE WITCHER,[19] the player repeatedly has to make moral decisions, choosing between various options of dialogue and ac-

10 Granic, Isabela/Lobel, Adam/Engels, Rutger C.M.E.: "The Benefits of Playing Video Games," in: *American Psychologist* 69 (2014), pp. 66-78.

11 DARFUR IS DYING (Take Action Games 2006, ●: Take Action Games)

12 REPLAY: FINDINGZOE (METRAC 2007, ●: Take Action Games)

13 MCDONALD'S VIDEO GAME (La Molleindustria 2006, ●: La Molleindustria)

14 PHONE STORY (La Molleindustria 2011, ●: La Molleindustria)

15 MIGHTY JILL OFF (Anna Anthropy 2008, ●: Anna Anthropy)

16 DYS4IA (Newsgrounds 2012, ●: Anna Antrophy)

17 THE LAST OF US (Sony Computer Entertainment 2013, ●: Naughty Dog)

18 DRAGON AGE: INQUISITION (Electronic Arts 2014, ●: BioWare)

19 THE WITCHER 3: WILD HUNT (Namco Bandai Games 2015, ●: CD Projekt RED)

tion during the course of play that make statements referring to social issues such as racism and sexism, among others.

Due to the abundance of relevant games released in the past decade, scientific literature has begun to focus on the subject of ethics and morality in digital games and the possible implications for players and designers.[20] So far, the question whether it is really possible to involve players to such an extent that they become aware of their moral values, reflect on them, or even initiate change processes has not been answered conclusively. Finding satisfactory answers requires first investigating different issues, for example the extent to which games encourage players to think about their various in-game moral choices, what kind of thoughts are brought up, what topics arise, and what discussions develop while playing and afterwards, particularly in relation to ethical principles. This article aims to make a contribution to answering these questions by presenting an empirical study. The research setting developed for this purpose can also be used as a template for future teaching/learning settings.

In the following, I will first explain the concepts of ethics and morality with a focus on normative ethical theory (section 2). Afterwards, I will show what role these rather abstract concepts play in the context of digital game content (chapter 3) and later I will introduce the game that was used in the empirical

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20 Consalvo, Mia/Busch, Thorsten/Jong, Carolyn: "Playing a Better Me: How Players Rehearse Their Ethos via Moral Choices," in: *Games & Culture* (2016), pp. 1-20, accessed February 17, 2017, http://journals.sagepub.com/doi/pdf/10.1177/1555412016677449; Heron, Michael J./Belford, Pauline H.: "'It's Only a Game': Ethics, Empathy and Identification in Game Morality Systems," in: *The Computer Games Journal* 3 (2014), pp. 34-52; Pohl, Kirsten: "Ethical Reflection and Emotional Involvement in Computer Games," in: Stefan Günzel/Michael Liebe/Dieter Mersch (eds.), *Conference Proceedings of The Philosophy of Computer Games 2008*, Potsdam: Potsdam University Press 2009, pp. 92-107; Schrier, Karen/Gibson, David (eds.), *Ethics and Game Design: Teaching Values through Play*, Hershey, PA: IGI Global 2010; Schrier, Karen/Gibson, David (eds.): *Designing Games for Ethics: Models, Techniques and Frameworks*, Hershey, PA: IGI Global 2011; Schulzke, Marcus: "Moral Decision Making in Fallout," in: *Game Studies*, 9 (2009), accessed February 17, 2017, http://gamestudies.org/0902/articles/schulzke; Sicart, Miguel: *The Ethics of Computer Games*, Cambridge, Mass.: MIT Press 2009; M. Sicart: *Beyond Choices*; José P. Zagal: "Ethically Notable Videogames: Moral Dilemmas and Gameplay," in: *Proceedings of the 2009 Digital Games Research Association International Conference* (DiGRA), London 2009.

study (chapter 4). Subsequently, I will present the research design (chapter 5) and the results (chapter 6) of the study before I finish with some conclusions (chapter 7).

2 APPROACHING THE CONCEPTS OF ETHICS AND MORALITY

Before we can answer the question of whether players can be stimulated to ethically reflect on their moral decisions while playing digital games, we need to clarify what the terms ethics and morality actually mean. In everyday language, both are often used synonymously,[21] although they describe very different issues in the proper sense. Morality can be understood as a complex, multilayered system of rules, norms, and values. Modern attempts to define it are hard to find, and what counts as definitional of morality is controversial. In a normative sense, which is the one that is most relevant in our context, morality refers to "a code of conduct that, given specified conditions, would be put forward by all rational persons."[22] Morality is the subject matter of ethics that, in turn, refers to the philosophical theory of morality and describes the systematic and discoursive reflection on it. Within ethical discourses, criteria for general judgement, methodological procedures or highest principles for the justification and criticism of rules of action are developed.[23] On a normative level, ethics follows a more practical task, trying to identify moral standards that regulate right and wrong conduct and to make statements about how people should act. This may include defining the good habits that we should acquire, the duties that we should take upon ourselves, or the consequences of our behaviour, among others.[24] Birn-

21 Hayse, Mark: "Ethics," in: Mark J.P. Wolf/Bernard Perron (eds.), *The Routledge Companion to Video Game Studies*, New York: Routledge 2014, pp. 466-474.

22 Gert, Bernard/Gert, Joshua: "The Definition of Morality," in Edward N. Zalta (ed.), *The Stanford Encyclopedia of Philosophy (Spring Edition 2016)*, accessed February 17, 2017, https://leibniz.stanford.edu/friends/members/view/morality-definition/a4/, p. 1.

23 Birnbacher, Dieter: *Analytische Einführung in die Ethik* [*Analytical Introduction to Ethics*], Berlin: De Gruyter 2013.

24 Fieser, James: "Ethics," in: James Fieser/Bradley Dowden (eds.), *Internet Encyclopedia of Philosophy: A Peer-Reviewed Academic Resource*, accessed February 17, 2017; http://www.iep.utm.edu/ethics/.

bacher[25] divides normative ethical theories into two groups. On the one hand, foundational approaches to ethics seek to not only describe, but also justify moral principles and attempt to integrate them into systematically constructed theories. Well-known in this context are the Kantian deontological ethics judging actions based on the derivation from a set of rules, and Bentham's and Mill's utilitarian ethics that judges actions based on their effects, especially their contribution to the happiness of everyone affected. On the other hand, approaches deal primarily with the description of the functional principles of existing morality or with their phenomenology are considered reconstructive ethics. The aim of reconstructive ethics is to simply develop an illustrative, systematic presentation of the norms actually in operation, and not, as in foundational ethics, to explain where they come from, to justify them and to subsume them under a single basic principle such as the Categorial Imperative or the Principle of Utility. An example of a reconstructive approach can be found as early as the treatises of Aristotle, which identify the fundamental principles of morally appropriate action along a virtuous path centered between two extremes: courage between cowardice and rashness, modesty between shyness and shamelessness, or patience between irascibility and lack of spirit.[26] Schopenhauer's model of ethics of compassion represents another reconstructive approach. He inveighs against the Kantian overemphasis on the morally imperative and explicitly dispenses with the search for an ultimate basic principle. By the simple reconstruction of socially accepted criteria of action and judgment, he traces all factually recognized and practised moral values back to the two cardinal virtues of justice and philanthropy.[27] More modern approaches, such as the Principlism[28] that was originally developed for medical ethics, take up Schopenhauer's ideas and extend them to a four-principle model: autonomy, beneficence, nonmaleficence and justice. These principles are compatible with various ethical theories as well as with commonsense moral values and thus represent a system of consensual basic principles. Another attempt at reconstructing an uncontroversial core stock of moral orienta-

25 D. Birnbacher: *Ethik*; Birnbacher, Dieter: "Two Methods of Doing Bioethics," in: Herlinde Pauer-Studer (ed.), *Norms, Values, and Society*, Dordrecht: Kluwer 1994, pp. 173-186.

26 Aristotle: *Nicomachean Ethics,* Cambridge, Mass.: Hackett 1999.

27 Schopenhauer, Arthur: *The Two Fundamental Problems of Ethics*, Cambridge, Mass.: Cambridge University Press 2009.

28 Beauchamp, Tom L./Childress, James F.: *Principles of Biomedical Ethics*, Oxford, England: Oxford University Press 1994.

tion lies within Gert's[29] ten moral rules, which formally recall the Ten Commandments from the Old Testament. The first five rules can be loosely summarized as 'do not harm', the second five as 'do not violate trust'. The diverse approaches of reconstructive ethics with their comparatively easy-to-understand systematizations may serve as a tool for analysing behaviour and reducing the underlying motifs to a handful of generally understandable basic principles. In this way, reconstructive ethics may form the basis for a discussion about the rules of human conduct, also enabling laymen to gain access to the philosophical discipline of ethics. Therefore, reconstructive ethics seems to be suitable for various educational purposes, for example media pedagogy with "ethically notable"[30] digital games as we will see later on.

3 MORAL DECISION-MAKING IN DIGITAL GAMES

In the following, I will discuss the different ways in which ethical frameworks and moral decision-making can be applied to digital games. The focus lies on the game content and in-game actions, because the further technological development progresses, the greater the sophistication and realism with which the narratives embedded in the game worlds are formed. Such sophistication and realism may occur in different ways. It may involve a large number of complex intersecting storylines with different characters and locations in which players enjoy a great freedom of action, as it is the case in many open world role-playing games, for example. Players can travel wherever they want to and complete quests for whomever they want to, and therefore also have to make (moral) decisions more frequently. The genre of episodic adventure games such as THE WALKING DEAD,[31] MINECRAFT: STORY MODE[32] and LIFE IS STRANGE,[33] however, follows a different path. Like television mini-series, the games are released as consecutive episodes and succeed in crafting highly compelling narratives and

29 Gert, Bernard: *Common Morality: Deciding What to Do*, Oxford, England: Oxford University Press 2004.

30 Zagal, José P.: "Ethical Reasoning and Reflection as Supported by Single-Player Videogames," in: Karen Schrier/David Gibson (eds.), *Designing Games for Ethics: Models, Techniques and Frameworks*, Hershey, PA: IGI Global 2011, pp. 19-35.

31 THE WALKING DEAD (Telltale Games 2012, O: Telltale Games)

32 MINECRAFT: STORY MODE (Telltale Games 2015/2016, O: Telltale Games)

33 LIFE IS STRANGE (Square Enix 2015, O: Dontnod Entertainment)

characters. Some of these games even explicitly advertise that the plot is driven only by the player's decisions, although it is not always clear whether players actually influence the story significantly or whether the claim is merely a marketing measure. Player decisions often contain a moral component, but apart from these decisions, the course of the game is largely predefined and the players' freedom of action is relatively limited.

Due to the abundance of new releases of games using moral decision-making as a means of providing a more interesting gaming experience, members of the German research platform PAIDIA state that over the course of the last decade, we have reached a "decision turn"[34] in digital games: the rise of a comparatively new type of digital game in which decision-making is explicitly emphasized to a much greater degree than in previous games. Corresponding to the often extended scope and importance of player choices, the mise-en-scène changes towards exposed moments of decision, for example via quick time events. In addition, common solution strategies are undermined, since there is often no clearly ideal option to choose, regardless of whether the players prefer an economistic or a moralistic gaming strategy.[35]

But how can a confrontation with such exposed in-game moral decisions lead players to reflect on their actions from an ethical point of view? Such confrontation is most likely to occur in games that contain a significant ethical component. This does not mean that they trigger media-mirrored social controversies, nor that, as an ethical reference system, they evaluate all conceivable interactions. Rather, a game must offer "non-trivial",[36] meaningful decisions that encourage players to think about their options.[37] Sicart suggests what such an ethically significant gaming experience could look like: "I define ethical gameplay as the ludic experience in which regulation, mediation, or goals require from the player

34 Ascher, Franziska/Schlegel, Mireya/Unterhuber, Tobias: "Introduction to," in: Redaktion PAIDIA (ed.), *"I'll remember this": Funktion, Wandel und Inszenierung von Entscheidung im Computerspiel*, Glückstadt: Hülsbusch 2016, pp. 9-14.

35 Unterhuber, Tobias/Schellong, Marcel: "Wovon wir sprechen, wenn wir vom Decision Turn sprechen" [What We Are Talking about When We Talk about the Decision Turn], in: Redaktion PAIDIA (ed.), *"I'll remember this": Funktion, Wandel und Inszenierung von Entscheidung im Computerspiel,* Glückstadt: Hülsbusch 2016, pp. 15-32.

36 Rollings, Andrew/Morris, Dave: *Game Architecture and Design: A New Edition,* Indianapolis, IN: New Riders 2004, p. 61.

37 M. Schulzke: "Fallout."

moral reflection beyond the calculation of statistics and possibilities."[38] He is of the opinion that compared to the playing process, the design process is too little recognized in the discussion about moral reasoning in digital games. Sicart considers digital games as moral objects, the design of which can convey and even teach moral values. The classical responsibility-related division into ethics of production and ethics of reception loses importance since the player participates directly in decision-making processes through the interactivity component, thus influencing the content and the plot of the game. During the manufacturing and design process, game producers therefore have to take future consumers into account much more than the producers of other mass media. Sicart believes that game designers and players should be seen not as completely independent entities, but rather as two bodies involved in the same process, encountering one another and negotiating their moral values in the virtual game world. Within games, designers create morally relevant realms of experience with "wicked" or "ill-defined problems",[39] and players interact with them and select the appropriate solutions, making meaningful decisions according to certain ethical criteria. For showing what is considered meaningful in the context of the game world, many games use one of their constitutive features: the feedback system.[40] This rewards or penalizes players for certain actions and shows them which behaviours are either desired and promising or unwanted and misleading. By linking this game-inherent evaluation of action (ludic level) with a context-defining game story (narrative level), a game can function as an ethical reference system.[41] Through play, the player gains a comprehensive understanding of how the game's mechanics value certain actions.

In different games, there are different modes of representing this valuation. In role-playing games based on the rule system ADVANCED DUNGEONS & DRAG-

38 M. Sicart: *Beyond Choices*, p. 24.

39 Sicart, Miguel: "Wicked Games: On the Design of Ethical Gameplay," in: Bo T. Christensen/Tore Christensen/Suzan Boztepe (eds.), *Proceedings of the 1st DESIRE Network Conference on Creativity and Innovation in Design*, p. 101, accessed February 17, 2017, https://pdfs.semanticscholar.org/36ea/928bdbd216bfd236546e18759a275f7c8542.pdf

40 McGonigal, Jane: *Reality Is Broken: Why Games Make Us Better and How They Can Change the World*, New York, NY: Penguin Books 2011.

41 J.P. Zagal. "Ethically Notable Videogames."

ONS,[42] such as BALDUR'S GATE,[43] the player chooses his or her moral orientation right at the beginning. In the creation of the avatar, there is the possibility of selecting an alignment for the avatar's behaviour. The player can choose the fundamental attitude as well as the in-game faction the avatar shall represent. These directives serve as superordinate guidelines. After certain actions, the avatar's reputation in the game world rises or falls and he or she as well as the other player characters will comment on how the chosen actions correspond to the guidelines. In MASS EFFECT,[44] in-game decisions, such as the selection of specific dialogue options or modes of conduct towards non-player characters, are morally evaluated and the player is credited with points on a bipartite morality scale, representing different in-game factions. Both parts do not depend on each other, i.e. players can gather points for "paragon" and "renegade" behaviour separately. In FALLOUT 3,[45] the avatar's Karma status is defined by a Karma title, corresponding to his or her Karma points and experience level. Positive or negative Karma points are obtained by in-game actions, while almost everything the player does leads to increasing or decreasing the number of points.[46] Common to morality systems such as these reputation or Karma systems is that they are measured numerically, and the current status is visible to the player, similar to the avatar's other attributes and talents such as strength and intelligence or combat and weapon skills. Such morality systems, however, allow only a comparatively superficial evaluation of behaviour and leave little room for manoeuvring,[47] since in most cases, it is clear which option will have which consequences. In this way, the player is led to choose a certain game path, an act which excludes alternative paths even though the effects on the game's content are usually relatively limited. This kind of game logic suggests that moral decisions might be made in a purely strategic sense, which prevents or impedes an ethical reflection process on the player's actions.

Some current games, however, follow a different path. In DRAGON AGE: INQUISITION,[48] the player's moral behaviour is valuated largely by means of the

42 Gygax, Ernest G.: *Advanced Dungeons & Dragons*, Lake Geneva, WI: TSR Hobbies 1977.

43 BALDUR'S GATE (Interplay Entertainment 1998, ●: BioWare)

44 MASS EFFECT (Microsoft Game Studios 2007, ●: BioWare)

45 FALLOUT 3 (Bethesda Softworks 2008, ●: Bethesda Game Studios)

46 M. Schulzke: "Fallout."

47 M. J. Heron/P. H. Belford: "Ethics, Empathy and Identification."

48 DRAGON AGE: INQUISITION (Electronic Arts 2014, ●: BioWare)

social group dynamics between the player character and his or her companions.[49] Each companion has a different personality and ethical standards corresponding to what they approve or disapprove of concerning what the avatar says or does. The game measures how much the avatar's companions support his or her behaviour, leading to a gain or a loss of trust. At best, they want to further intensify the friendship, e.g. by offering further options for conversation about more personal issues. At worst, they state that they do not want to support the avatar any longer and leave the group. In THE WITCHER 3—WILD HUNT,[50] game designers implemented some features that lead the player to more or less constantly question his or her morality. In many in-game quests, there are no obvious good or bad choices, and some missions lead to completely unexpected and unintended consequences. Even though these decisions appear mostly in secondary quests which are not linked to the main story, they give the impression of being meaningful within the game world. This is achieved, for example, by means of "prolonged causality",[51] i.e. that much time may elapse between making a choice and facing its consequences. In the early game, for example, the player character can choose to save the life of a woman by administering a potion to her, healing her serious wounds, though not knowing what other damage the potion may do to her. Many hours later, he encounters the woman's husband at another end of the in-game world. The husband is rather sad and frustrated, stating that his wife is alive, but totally apathetic and does not recognize anyone anymore. The levels of rewards and punishments often do not seem to be related to acting morally right or wrong, so the player feels neither confirmed nor disproved, but is left with his or her emotions after facing the consequences of a decision. For example, there are some quests in which the player feels compassion for the issuer of the quest, who might be a very poor person, but nevertheless wants to give some money as a reward. Unlike in other games, the player is not rewarded for refusing the money—except with the satisfaction of having lessened a non-player character's struggle.

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49 Domsch, Sebastian: *Storyplaying: Agency and Narrative in Video Games*, Berlin: De Gruyter 2013.

50 THE WITCHER 3: WILD HUNT (Namco Bandai Games 2015, ●: CD Projekt RED)

51 Ascher, Franziska: "Preis der Neutralität: Die Witcher-Reihe als Seismograf des Decision Turns" [The Price of Neutrality: the Witcher Series as a Seismograph for the Decision Turn], in: Redaktion PAIDIA (ed.), *"I'll remember this": Funktion, Wandel und Inszenierung von Entscheidung im Computerspiel*, Glückstadt, Germany: Hülsbusch 2016, p. 46.

As we can see, providing meaningful choices does not always mean that the choices necessarily need to have a big impact on the further plot of the game. To encourage ethical reflection, the type of decision is paramount. As Zagal[52] showed, a central role in this context can be attributed to moral dilemmas. These are situations providing several mutually exclusive options for action with good moral reasons for each of them. In theatre, literature and film, dilemmas involve participants both on an intellectual and on an emotional level when thinking about what solution would be most suitable for the characters. But whereas in traditional media the choice stays on a hypothetical level for the spectators, the players of a digital game occupy a central role in the game's story and thus make the decision their own. Hence, spectators and players encounter dilemmas in different forms, and it seems that a dilemma that is received only passively is less suited to triggering an ethical reflection process than a dilemma with a direct relation to the player's agency would be—not least because of the higher level of immersion in the latter case. Immersion is a basic prerequisite for making the consequences of a player's decision feel relevant to him or her at the narrative level. Besides player agency, there are other factors that are likely to trigger immersion: visual aspects such as realistic graphics and the first person perspective, and gameplay aspects such as the plausibility of the interactions of the players with the game world, as well as the quality and credibility of interactions between non-player characters.[53]

The following chapter provides a brief overview of a game that fulfils many of the above-mentioned requirements, and therefore forms an appropriate basis of an empirical investigation into the possibilities of digital games to ethically reflect moral action.

4 MORALITY PLAY AND *THIS WAR OF MINE*

The Polish independent production THIS WAR OF MINE[54] is a hybrid game combining elements of various genres such as action and strategy. It can only be played offline in single player mode and has an average total game time of approximately six to ten hours. The developers basically credit two literary documents as sources of inspiration for the game: a letter written by a former US

52 J. P. Zagal: "Ethical Reasoning and Reflection."

53 M. J. Heron/P. H. Belford: "Ethics, Empathy and Identification."

54 THIS WAR OF MINE (Deep Silver, ●: 11 bit studios)

soldier who suffered from Post-Traumatic Stress Disorder since having been part of the Operation Phantom Fury in Iraqi Fallujah, and an article in which an anonymous civilian describes his survival in a besieged Bosnian city during the Yugoslav Wars.[55] The second also seems to have influenced the naming of the various characters and scenes in the game. The major arena is the city of Graznavia in the fictitious Republic of Pogoren, where a civil war between rebels and the government is taking place. One morning, a small group of civilians finds itself in the ruins of a building, which serves as their shelter. The players are confronted with various tasks, but not before they symbolically accept the superordinate game goal by clicking on the writing 'survive' on the title screen. In order to finish the game successfully, players have to hold out until the end of the war with at least one character, but it remains unclear how many days and nights this will last. Until then, the characters must be kept alive by fulfilling their basic needs. Food as well as equipment and materials for preparation are needed to fend off hunger, and warmth and medicine are necessary in the barren living rooms to prevent illness. In order to avoid getting hurt during night searches of the surrounding areas or when looters attack their property, the civilians have to find weapons to defend themselves. The characters also need resting phases to ensure that fatigue and exhaustion do not overwhelm them. And finally, characters are threatened by sadness and depression, against which music and literature as well as morally appropriate behaviour—and this is one of the main reasons why the game was chosen for the investigation—are helpful means of distraction or defense. In the course of the game, the player characters are repeatedly forced to make moral decisions of different kinds, depending on the time of day. During the day, for example, people from Graznavia come knocking at the shelter's door from time to time, often in a state of emergency and asking for food, for help or to join the group. This scenario confronts the players with dilemmatic decision-making: if they agree to help, they have to manage without the character they send to support until the next morning. If they let somebody join the group, the basic needs of one more character must be satisfied from the same small amount of available resources. In both cases, a rejection of the request implies that the constitution of all members of the group who are not purely selfish in character is adversely affected. In addition, no situation provides the players with all necessary information: at least during the first game, the players

55 Plass-Fleßenkämper, Benedikt: "Interview with Pawel Miechkowski and Karol Zajaczkowski," 2014, accessed February 17, 2017, www.gamona.de/games/this-war-of-mine,was-wuerdest-du-tun-wenn-deine-stadt-bombardiert-wird:article.html

do not know when and in which state the supporting character will return from helping the other people. They cannot be sure what will happen if they let a stranger into the house and have no information about how many and what kind of resources are available to find in the near future. This makes it much more difficult to choose between approval and rejection.

How the player character behaves in the neighbourhood during the nocturnal ramparts is left to the players: they can let him or her explore the area and buildings as silently as possible, i.e. avoiding all people, but they can also let him or her seek open confrontation with a drawn weapon. It is incumbent upon the players to allow the character to take only items that are not relevant to non-player characters. However, he or she can also steal valuable objects such as drugs, foodstuffs, etc., which are often marked as 'private property'. In addition, the players are not only forced to choose between the well-being of their own group and the well-being of the non-player characters, but must also prioritize the needs of the individual characters within the group and thus accept that some of them are clearly suffering from hunger, illness, injury, fatigue or sadness for some time.

As we can see, THIS WAR OF MINE seems to be quite promising for encouraging ethical reflection, since it provides moral dilemmas, realistic graphics and credible non-player characters, among other things. Thus, the game was chosen for an empirical study that is described in the following chapters.

5 RESEARCH DESIGN

This article is based on a qualitative study that was conducted in 2015. Similar to the approach of Consalvo, Busch, and Jong[56] (2016), the aim was to give more attention to player voices when theorizing the field of moral decision-making with ethically relevant digital games, and not to, for example, focus on the analysis of games themselves. The exploratory study investigated the degree to which playing a digital game can encourage young people to exchange ideas on ethical issues. The research questions asked what kind of discourses developed among the participants during and after playing, what ethical questions occurred from the players' perspective, and what ethical principles the players employed to deal with their questions. The main emphasis rests on how the whole process was reflected verbally by the participants in order to deduce whether and to what

56 M. Consalvo/T. Busch/C. Jong: "Playing a Better Me."

extent they reflected on their moral decisions, making reference to principles derived from normative ethical theories implicitly or explicitly.

The participants would ideally be a small group of six to eight adolescents, so that each of them would have the chance to contribute meaningfully to the playing process as well as to the discussion. They needed to be at least 16 years of age since THIS WAR OF MINE received a USK 16 rating in Germany. After consulting several high schools and youth centres, a group of seven students was selected to participate. All of them were male, six were still in high school, and one had just graduated. Two stated that they played digital games for more than six hours a week, three between two and six hours, and two less than two hours. In view of the fact that the study was conducted with only one group of participants, it is clear that the results are neither generalizable nor representative, but they can give a first impression of the developing thoughts and discourses that an ethically relevant digital game can evoke in a certain group of young people.

The participants played THIS WAR OF MINE on two afternoons for a total of approximately three hours and reflected upon their experience directly after the second session in a group discussion. Since the adolescents were to explore the game independently, they did not receive any information in advance. One participant served as the active player, as the game has only a single player mode, the others took an advisory role. The player sat opposite his counsellors and played on a laptop while the others watched the game on a big screen. The youths did not make use of the possibility to change positions but remained in their roles during both play sessions. Apart from a few situations in which the player acted affectively, almost all decisions were made together. Before the player acted, he sought confirmation by asking questions, or he directly carried out what the others had agreed on.

For the purposes of data collection, the study was divided into a play phase and a discussion phase, meaning that discourses during game play and during post-game discussion were recorded separately. Thus, two different survey situations were present, so that different methods were combined via triangulation. The game process itself was documented using participant observation, whereby the data collection was not primarily based on field notes and observation protocols, but on recordings via a total of four video cameras. After the play sessions, the youths were encouraged to retrospectively exchange views on what they had experienced. For this purpose, a group discussion was selected as the most suitable method. Except a vague initial stimulus, the discussion was not shaped by external forces. When the discussion stopped for more than 20 seconds, the participants were asked to explain more in detail an aspect they had already men-

tioned before. The group discussion lasted for about an hour and was also recorded on video.

6 RESULTS

Since the survey situations differed significantly from one another, it seemed sensible to evaluate the data material separately. In the play sessions, the participants were concentrated on their playing activities and thus had a high cognitive load. During the group discussion, they could choose their focal points freely. For both cases, the video recordings were watched several times and transcribed completely. The method of comprehensive qualitative content analysis was used to code the transcriptions thematically in order to reduce the data to essential content that still represented the basic material. Subsequently, the results were examined for their relation to the research questions and for their resonance with various approaches of normative ethical theory.

During the evaluation of the participatory observation, a number of sequences in which the adolescents had to make decisions with a clearly moral character were selected for closer analysis. These sequences were indicated by features like an intensive communication process with frequent speaker changes in a short period of time or the expression of emotional involvement via loud and committed contributions. Another indication was the explicit reference of the participants to certain sequences of the play sessions during the group discussion. In the end, several game sequences were identified where participants made decisions that were regarded by them as particularly relevant to moral action. In one case, for example, a player character was sent at night to the Location *Quiet House*, where two elderly non-player characters live. At this point of the game, the group desperately needed food and medicine since their supplies were completely exhausted. After entering the house without knocking, the elderly man immediately rushed towards the player character and incessantly pleaded to leave him and his sick wife alone, not to rob them or to do any harm in another way. The players were obviously in a dilemma. In their comments, a clear aversion to robbing the couple could be discerned, and a discussion about the right priorities for action emerged, weighing up the deontological and the consequentialist ethical approaches for dealing with the situation. The participants felt the need to act in a nonmaleficient manner and wanted to respect the self-determination of the non-player characters. After initial hesitation, the youths finally searched the house and thought over very carefully what items they really needed and what items the couple might also be dependent on for survival. They tried

to find a way that, in their opinion, could be roughly described as fair for both parties, considering the ethical principle of justice as a basis for their action. In a second sequence, they again sent one of the player characters to a house with another elderly couple, who in this case had their adult son with them. Without engaging the family, the players crept through the entire house and recklessly took everything the player character could carry. The adolescents completely ignored the ethical principles they had considered in the sequence before, such as not harming those non-player characters who seemed in precarious situations similar to their own, or respecting their self-determination. They completely disregarded the deontological level, acting egoistically and following only the supposedly best possible result for the player characters. Having finished the sequence, one participant questioned what the group had just done, but the others did not react to him explicitly. This conduct was symptomatic for the play sessions. Analysis of the discourses revealed that during the play sessions, the students talked primarily about strategy and narrative elements in the game, while they spent only little time on justifying and evaluating their moral decisions and actions.

In the group discussion, however, the ethical reflection of their moral action was main topic for the participants. Particularly, the evaluation and justification of their moral decisions played an important role. It emerged that they had noticed that they had partly been acting inconsistently and without any underlying principles, and they admitted that they regretted this. In evaluating, they differentiated between diverse types of decisions in the game and their relevance for the further course of action. Most of the decisions were classified as not morally but pragmatically driven. In justifying their decisions, they argued on ludic, narrative and player-related levels. In situations where they felt more involved in the narration, they tended to orient themselves towards moral principles, rather than in other scenes where the progress of the game was in the foreground and the participants followed utilitarian motifs and worked on game-immanent gratification. Background story and presentation of the player characters appeared to offer the adolescents sufficient room for identification and empathy. They saw the game's setting as realistic and felt encouraged to put themselves into the position of the characters, to see the game world through their eyes and to think against this background about the possibilities of decision and action on the basis of ethical questions. At least to some extent, they felt personally responsible for the deeds of the characters. At the player-related level, the adolescents, in addition to their common strategy, also mentioned emotions such as fear and euphoria. They also discussed the consequences of their actions, including possible

causes, effects and counter-measures of their moral choices, and the manner in which they were reflected in the game.

Furthermore, I analysed the ways the participants transferred and converted modes of thinking and acting that represented their own moral systems from the 'real' to the virtual game world via intermondial transfers[57] and vice versa. Several times, the participants reflected on the extent to which their decisions were comparable to those they would encounter in a similar situation outside the game. With the elderly couple living alone, for example, the youths were more compassionate and treated them with much more respect than they did with the other couple who had their adult son with them. In another sequence, a non-player character named Emilia asked to join the group, and the young people weighed different arguments which would also play a role outside of the game world. Thus, they assessed game events according to certain moral principles that are valid for them in the 'real' world. This pattern is consistent with the findings of other empirical investigations.[58] While the participants perceived the civil war scenario as realistic all in all, however, they were hardly able to see any contact points with their own lives and therefore had great difficulty imagining how moral actions in the game could influence their decisions in the real world.

If the statements of the participants are put into context with the ethical theories described in the second chapter, it can be concluded that in general, the students tried to transfer their own values and moral systems to the player characters. In most of the situations, they tried to be good, i.e. they tried to follow the basic principles of modern societies, as derived from the concepts of reconstructive normative ethics. These principles played an important role in their discourse, including concepts such as beneficence, justice and nonmaleficience. Principles such as egoistic self-centeredness and altruism were also discussed by the adolescents. Furthermore, the participants exchanged views on where their own decisions were motivated by deontological or rather consequentialist motifs.

57 Fritz, Jürgen: *Wie Computerspieler ins Spiel kommen: Theorien und Modelle zur Nutzung und Wirkung virtueller Spielwelten [How Computer Gamers Come into Play: Theories and Models about Usage and Effects of Virtual Game Worlds]*, Berlin: Vistas 2011.

58 Witting, Tanja: "Wie Computerspiele beeinflussen" [How Computer Games Affect], in: *AJS Informationen* 1 (2010), pp. 10-16.

7 CONCLUSION

This paper aims to provide some fodder for the current debate on the educational potential of digital games with a focus on promoting ethical reflection and moral decision-making abilities. The above empirical study contributes to answering the question of the possibilities of digital games to reflect moral action and at the same time provides a didactic model of how these reflection processes can be promoted in formal and non-formal educational contexts. THIS WAR OF MINE, the game used in the study, seems fundamentally well-suited to encouraging ethical reflection processes. Concrete occasions for the participants of the study were, among other things, the feedback mechanisms of the game, such as verbal feedback from non-player and player characters as well as the change of the characters' emotional state due to morally questionable actions. Likewise, the successful narrative embedding of the game's mechanics, the realistic graphic representation and the multifaceted player characters helped to immerse players in the game world. The participants considered, among other things, whether the well-being of their own group was more important to them than the welfare of non-player characters, what differences they had made in dealing with figures of different age and sex, or to what extent the condition of the in-game characters was comparable to that of people who are currently fleeing from war zones. This type of discussion suggests that a scenario similar to the research setting could be carried out as an afternoon activity in a youth centre in order to encourage the visitors to talk about one of the topics mentioned above. Furthermore, group work in the school's history, social sciences or philosophy classes could be fruitfully linked with the subjects broached by the game.

Regarding possible areas of further research on the relationship between ethics and morality and digital games, Zagal[59] shows that the topic must be considered more broadly than just on the level of game content and in-game actions. Another important aspect could be the ethical value that a digital game has as a cultural artifact through its mere existence. For example, the right of existence for a game such as KRISTALLNACHT,[60] an economic simulation of the Warsaw Ghetto during the Second World War, could be doubted. Any historico-critical approach by the developer is not easily recognizable during the game, and it remains unclear whether the game succeeds in approaching its highly sensitive topic in an appropriate form—its mere existence may not, therefore, make it a

59 J. P. Zagal: "Ethically Notable Videogames."

60 KRISTALLNACHT (Increpare Games 2009, ●: Increpare Games)

significant cultural or ethical artifact. Additionally, the entire manufacturing and distribution process of a game can also be examined as to whether it is developed, produced and marketed under ethically appropriate conditions. One can also ask whether concepts such as fairness and honesty are perceived or experienced by players during their playing process, say with regard to topics like cheating and toxic behaviour. There are, therefore, at least four different ethically relevant levels: the ethics of the game as a cultural artifact, the ethics of game production, the ethics of playing and the ethics of in-game actions. While this paper has focussed on the latter dimension, the others offer an equally wide range of possibilities for further work.

A definitive answer to the question to what extent can ethics and morality be "learned" from digital games cannot be found at this point. It seems possible to develop certain moral insights by playing digital games, and players can certainly develop their moral sense by reflecting on their decisions and actions, especially if there is a possibility to talk about their experience with peers. It remains debatable, however, whether this could also be the case if players were detached from the setting described above, i.e. if an adolescent would also reflect on her in-game actions playing alone at home. As the importance of research on the educational potential of digital games continues to be emphasized academics as well as educators, we should not forget that it is the act of playing that counts, not the game itself. Despite all efforts to create a complex game environment that enables an ethically significant gaming experience, the choice to fill it with life, to accept the challenge, and to play morally in the best sense, is ultimately up to the players themselves.

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THE WALKING DEAD (Telltale Games 2012, O: Telltale Games)
THE WITCHER 3: WILD HUNT (Namco Bandai Games 2015, O: CD Projekt RED)
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Making Ethical Decisions in Serious Games

SONJA GABRIEL

INTRODUCTION

This article addresses some serious games that deal with topics of morality and ethics. There are different ways in which game designers can incorporate ethics in their games, for example through narration or game mechanics. However, the question being asked in this study is if games can influence players or at least make them think about the topics discussed within the game. First, it is necessary to look at some examples and describe their approaches towards ethics and morality in gameplay.

Ethical gameplay has become an increasingly important topic in many games in recent years. There are some blockbuster games in which players are asked to consider their in-game-actions carefully when it comes to decisions concerning whether the player should act morally right or wrong to be successful. Games might even require players to decide in the beginning if they want to be good or evil and thus develop different narrative paths according to the player's decision. Most of the newer, complexer games in the role-playing or open-world genre as well as the relatively new genre of episodic adventure games also provide ethical dilemmas. Well-known examples are MASS EFFECT,[1] THE WALKING DEAD[2] and the FALLOUT-series.[3] Amanda Lange[4] conducted an interesting study on how

1 MASS EFFECT 3 (Electronic Arts 2012, ●: BioWare)

2 THE WALKING DEAD (Telltale Games 2012, ●: Telltale Games)

3 FALLOUT 3 (Bethesda Softworks 2008, ●: Bethesda Game Studios)

4 Lange, Amanda: "You're Just Gonna Be Nice: How Players Engage with Moral Choice Systems," in: *Journal of Games Criticism*, 2014.

players behave in video games providing moral decisions. She found out that most of the players she surveyed stated that they would prefer playing as the good guys. Moreover, most of them also acknowledged that their behavior in the game world is similar to their behaviour outside of the game world, at least most of the time.[5] On the other hand of course, games are a space for trying out different behaviours.[6] As there are no real-world consequences, players can also test what it feels like to be the bad guy. When it comes to serious games, however, there are not so many examples that allow for a choice between the good and the bad. One game that provides a basic approach of choosing between different characters is BAD PAPER—THE DEBTOR GAME[7] in which players can decide if they want to act as the debtor or the collector.

Before having a closer look at examples of the ways in which serious games introduce ethical gameplay, there is a need to define both serious games and ethical gameplay. The term "serious games" was first mentioned in 1970 by Abt,[8] describing games that are useful for training and educational purposes. Current definitions have been influenced by Ben Sawyer's & David Rejeski's white paper "Serious Games: Improving Public Politics through Game-based Learning and Simulation"[9] where the authors suggest using technology and methods from the commercial video game industry in order to "improve game-based simulations in public organisations."[10] Although the term "serious games" seems to be an oxymoron at first glance, Michael & Chen give a definition that provides a solution: "A serious game is a game in which education (in its various forms) is the primary goal, rather than entertainment."[11] For Zyda it is important

5 Dittmann, Andreas: "Verzeihen Oder Schießen. Die Darstellung von Ethik Und Moral in Computerspielen," December 19, 2015, https://andreasdittmann.atavist.com/verzeihen-oder-schiessen#chapter-192483

6 Cf. Costikyan, Greg: *Uncertainty in Games*, Cambridge, Mass.: MIT Press 2013.

7 BAD PAPER—THE DEBTOR GAME (Fusion 2015)

8 Abt, Clark C.: *Serious Games*, Lanham, MD: University Press of America 1987.

9 Sawyer, Ben/Rejeski, David: "Serious Games: Improving Public Policy through Game-Based Learning and Simulation," *Woodrow Wilson International Center for Scholars*, 2002.

10 Djaouti, Damien et al.: "Origins of Serious Games," in: Minhua Ma/Andrea Oikonomou/Lakhmi C. Jain (eds.), *Serious Games and Edutainment Applications*, Springer 2011, p. 27, http://www.ludoscience.com/files/ressources/origins_of_serious_games.pdf

11 Michael, David/Chen, Sande: *Serious Games: Games That Educate, Train, and Inform*, Boston, Mass.: Course Technology PTR 2005, p. 17.

that serious games involve some kind of pedagogy, but he also says, "[p]edagogy must, however, be subordinate to story—the entertainment component comes first."[12] All these definitions share the need for a purpose beyond or apart from entertainment, including any kind of educational message in order to train or educate players.

When it comes to teaching with digital games, it seems obvious that subject-related topics like mathematics, literature, or history can somehow be included in games by using narrative means or quests that require knowledge in the respective field in order to overcome obstacles in the game. But what about lessons in making ethical and moral decisions? According to Merriam Webster Dictionary, morality can be simply defined as "beliefs about what is right behaviour and what is wrong behavior."[13] Bernard Gert, however, defines morality as an informal public system applying to all rational persons.[14] This means that people can only be judged by a moral system which they understand. "Informal" means that there are no judges and no predetermined procedures stating if something is morally right or wrong. According to Schrier & Kinzer, digital games can also be used by teachers "to play with the potential outcomes of their ethical decisions, try on or alter one's identity or affinity, and iterate what-if scenarios that they would not do otherwise".[15] However, there are also games that have moral decisions at the centre of their gameplay. The following sections will take a closer look at some serious games that deal with morality and how game designers attempt to get a certain message across to their players. First, I will analyze how morality is integrated into commercial games.

12 Zyda, Michael: "From Visual Simulation to Virtual Reality to Games," in: *Computer*, 38/9 (2005), p. 26.

13 "Definition of MORALITY," *Merriam Webster*, accessed January 4, 2016, http://www.merriam-webster.com/dictionary/morality

14 Gert, Bernard: *Morality: Its Nature and Justification*, Oxford University Press 1998, p. 10.

15 Schrier, Karen/Kinzer, Charles K.: "Using Digital Games to Develop Ethical Teachers," in: David Gibson/Youngkyun Baek (eds.), *Digital Simulations for Improving Education: Learning through Artificial Teaching Environments*, Hershey: IGI Global 2009, pp. 308-32, p. 316.

ETHICS AND MORALITY IN GAMES

In recent years, game designers have included morality systems in games in order to offer more possibilities for (meaningful) decisions about who you want your game character to be. However, there are usually some flaws in the system. As Takács claims, most of the games that include a morality system make you decide between either being good or evil—there is nothing in between.[16] This can also be seen in reward systems, as players are only rewarded if they act according to the side they have taken. Zagal claims the following about ethical frameworks in games: "certain behaviors and actions are rewarded while others are not."[17] In order to design characters whose appeal is based on their being good or evil, it is necessary to provide "a diversity of moral character beyond just 'good' and 'evil'".[18] Such a character needs to have a good mixture of good and evil character traits. So, there needs to be more complexity. Furthermore, the character and his/her moral identity should change due to the events in the game. As Ryan & Staines state, "[l]ooking at the character one should see the scars of the history that shaped her: the humiliating moment that made her humble or perhaps spiteful, the praise that fuelled her honour and her pride."[19]

The only advantage Suddaby sees in this strict division of good and evil is that players are encouraged to play the game multiple times.[20] This could be advantageous for game designers as a binary morality system results in "less variation in possible player decisions, meaning drastically different content can be created for the two distinct play styles. Doing this would not be possible in a

16 Takács, Miklós/Takács, November: "5 Mistakes Every Videogame with a Morality System Makes," *Dorkly* 2013, http://www.dorkly.com/article/56575/5-mistakes-every-videogame-with-a-morality-system-makes.

17 Zagal, Jose P.: "Ethically Notable Videogames: Moral Dilemmas and Gameplay," in: *Breaking New Ground: Innovation in Games, Play, Practice and Theory. Proceedings of DiGRA 2009*, 2009, www.cs.vu.nl/~eliens/serious/local/.../game-ethic.pdf

18 Ryan, Malcolm/Staines, Dan: "Ethical Choices in Videogames: Lessons from Moral Psychology," *Words on Play*, May 6, 2011, http://wordsonplay.com/2011/05/06/ethical-choices-in-videogames-lessons-from-moral-psychology/, p. 22.

19 Ibid.

20 Suddaby, Paul: "All about Karma: Decision Making and Morality in Games," *Envatotuts+*, June 27, 2014, http://gamedevelopment.tutsplus.com/articles/all-about-karma-decision-making-and-morality-in-games--cms-21479

system with more varied player choices [...]."[21] In order to make player experience more similar to making decisions to real life, game designers need to integrate many different shades of grey instead of merely offering a binary decision-making system. Playing behaviour is judged "against a predetermined set of parameters"[22] which often is quite removed from making real choices. Many commercial games trying to include ethical gameplay use "narrative-based decision trees that the player has to follow to complete the game."[23] Players might even be punished for not sticking to their initial choice of wanting a good or evil character.[24] As Sicart says, ethical gameplay includes much more than taking either the good or the bad side: "Ethical gameplay refers to experiences in a game that force players out of conventional modes of interaction and decision making and toward the achievement of goals. The activity of play becomes challenged by a need for thinking morally."[25] Including ethical decisions in the narration seems to be the most obvious choice for game designers. However, Flanagan & Nissenbaum[26] identify fifteen different game elements that might be used to incorporate values into the game design process. Among others, the authors discuss narration, character design, player choice, point of view, rewards, and strategies. Of course, not all of these elements can be applied and integrated in each and every game in order to provide moral choices or ethical dilemmas, but it is worth having a closer look at some of these strategies and how they have been used in serious games.

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21 Ibid., p. 8.

22 Swain, Eric: "Choice and Consequence in 'Papers, Please'," *PopMatters*, 2014, http://www.popmatters.com/post/183289-papers-please-morality/

23 Sicart, Miguel: "Values Between Systems: Designing Ethical Gameplay," in: Karen Schrier/David Gibson (eds.), *Ethics and Game Design: Teaching Values through Play* IGI Publishing 2010, p. 1, http://www.miguelsicart.net/publications/ValuesBetweenSystems.pdf

24 Perdue, Brandon: "Ethical Dilemmas and Dominant Moral Strategies in Games," *Gamasutra*, August 18, 2011, http://www.gamasutra.com/view/feature/6460/ethical_dilemmas_and_dominant_.php?print=1

25 Sicart, Miguel: *Beyond Choices*, Cambridge, Mass: MIT University Press Group Ltd 2013, p. 25.

26 Flanagan, Mary/Nissenbaum, Helen: *Values at Play in Digital Games*, Cambridge, Mass: MIT Press 2014.

MORAL DILEMMAS IN SERIOUS GAMES

Although serious games are quite often produced with less financial means than commercial blockbuster games, according to Sicart[27] serious games are often associated with ethics. The following part of the paper will present some examples that focus either on topics which can be seen as morally controversial or providing moral dilemmas. I refer to a *moral dilemma* as a situation "in which an agent morally ought to adopt each of two alternatives but cannot adopt both."[28] One of the serious games following the path of confronting the player with such difficult decisions is SPENT.[29] SPENT is a text-based browser game that asks players to step into the shoes of poor people living in and around Durham. The entry into the game reads like a provocative challenge: "Urban Ministries of Durham serves over 6,000 people every year. But you'd never need help, right?"[30] The game only starts after the player presses "Prove it. Accept the challenge". The game provides players with a simple background story setting the stage for the decisions to come. The aim is to "survive" on $ 1,000 a month by choosing one of two or more alternatives. The first decisions are about finding a job as well as a place to live and seem quite easy to make. You can see at once what you will earn or have to spend for your flat and commute. Eventually you might receive facts concerning what your decisions would mean in real life (for example, when deciding on your insurance plan, you are given facts about why many other people have decided the same way). Some situations given within the game encourage players to think carefully about which option they select. For example: 'Your child has been invited to a birthday party. Will you buy a present (although you do not have much money left), send your kid without a present or even keep him/her home from the party?' Whichever choice you make, there is no feedback given by the game that signifies if the player's decision was a good or bad one. The player is left alone to think about possible short and long-term consequences. Another example of a dilemma presented to the player occurs when a neighbour is moving and offers to pay you money for help.

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27 Sicart, Miguel: "Moral Dilemmas in Computer Games," in: *Design Issues* 29/3 (2013).

28 Sinnott-Armstrong, Walter: "Moral Dilemmas and Incomparability," in: *American Philosophical Quarterly,* 22/4 (1985), p. 321, http://www.sinnott-armstrong.com/uploads/6383/media_items/moral-dilemmas-and-incomparability.original.pdf

29 SPENT (McKinney 2011), http://playspent.org

30 Ibid.

However, if you accept, you will miss your child's star performance in a school play. The player is again left with her own thoughts concerning what might happen as a consequence.

Some of the decisions made might influence further gameplay as "[s]ocial, psychological and other results of the player's choices are reflected in the gameplay in the shape of economic impacts."[31] If you ignore your toothache and use numbing gel instead, it might lead to higher costs at the dentist as the tooth problems persist. Sometimes, the game presents you with short texts, quotes, or facts, for example, on the number of people who pick up smoking in order to relieve stress even though studies have proven that cigarettes do more harm than help. Sometimes, there are no obvious consequences related directly to your decisions and it is on the player herself to reflect on possible outcomes. This makes the game similar to real life decisions as you do not know most of the time what might happen next. SPENT can be distinguished from many other games as there is no right or wrong decision and you are not punished or rewarded for choosing one option over another. Thus, the game is about making decisions which the players need to reconcile with their conscience and which they can afford. What is more, the game sometimes provides the player with the possibility to ask friends via Facebook to borrow money to show players what it is like to ask others. And this is not easy for all people—even if it is just a game. Northen states in her survey on people who have played *Spent*: "We discovered that the very same people who had no problem posting updates about lost sheep and asking to borrow a shovel found it difficult to ask for help when it felt real."[32] This shows that the game definitely can make people think about the actions they take within a game. Bogost sees the idea of including this option of using Facebook to request help "as a muted simulation of the shame that I'd experience in real life."[33] The experience most players will have is one that demonstrates what it is like to step out of the middle class into the life of people who live near the poverty line. As the designer of the game states, "many who play the game bring middle class

31 Sezen, Tonguc Ibrahim: "The Representations of Poverty in Digital Games," in: Veronika Bernard/Serhan Öksay (eds.), *Images (II)—Images of the Poor: The Conference Proceedings*, LIT Verlag Münster 2013, p. 55.

32 Northen, Janet: "Case Study: PlaySpent.org," *AIGA*, July 15, 2011, 11, http://www.aiga.org/case-study-playspent/

33 Bogost, Ian: "Simulating Social Shame," *Ian Bogost*, February 26, 2011, 5, http://bogost.com/writing/blog/simulating_social_shame/

sensibilities the first time they play."[34] Of course, making morally correct decisions is much harder when you do not have enough money. Coren also states that "[i]n real life, it seems, good people sometimes have to make bad choices."[35] Basically players know instinctively what choice would be best for staying healthy and living a happy life, but they are restricted by paying attention to not spending more money than they earn/still have. Each time you play the game, the situations presented by the game slightly change. This way, it makes sense to play more than once to test out different options and their consequences. All in all, the game—even if it is designed quite simply and does not provide a detailed depicted game world or avatars—offers opportunities for players to think about living a life in which everyday decisions might mean that you cannot act morally right. This example proves that serious games deal with moral dilemmas and thus can influence player attitudes concerning the topics dealt with in the game.

SERIOUS GAMES THAT CHALLENGE YOUR MORALITY WHEN PLAYING

LAYOFF[36] works on a completely different level than SPENT. Playing the game means doing things that are not regarded as morally acceptable. The game was designed to study empathy and depicts the time of the financial crisis in the US when many people lost their jobs. The rules are quite easy—players have to swap adjacent workers to get rows of 3 or more of the same workers in order to achieve workplace efficiency adjustments. The workers are fired and appear at the bottom of the screen where you can see them wandering towards the unemployment office. Bankers, however, who appear after some time, can be swapped but they do not lose their jobs. When the player moves his/her mouse over the non-playable character, a short biography can be read that includes the NPC's name, age, job description, and other personal information: "Milo, 26, is an apprentice to a welder at General cars, Inc. Known as an honest, hard-working person, Milo used to work in trash collection but was not strong enough to continue doing this job, so is trying to gain new skills. Milo has a spouse and on

34 Coren, Michael J.: "Live Life below the Poverty Line by Playing Spent," *FastCompany*, October 5, 2011, p. 7, http://www.fastcoexist.com/1678607/live-life-below-the-poverty-line-by-playing-spent

35 Ibid.

36 LAYOFF (Tiltfactor 2009)

Fridays cares for their one-year-old baby. Milo is a secret cartoon artist but rarely shows the colorful drawings to anyone."[37] This way, players might identify with some of the non-playable characters and hesitate to choose them. If you want to continue playing the game, however, these characters also need to be sacrificed. As Flanagan & Lotko point out, the game provokes criticism about the simplicity of the simulation. "The sadistic power that a player has over these workers, however, does not seem to limit personal reflection in play."[38] Although players know that the characters are only imaginary ones, they also feel that these scenarios might happen in reality in the same way and might even be a scenario happening to them.[39] The newsticker in the middle of the game screen displays extracts of authentic news coverage and thus establishes realism and encourages players to think about the decisions they are making in the game. Basically, the game cannot be won—you can save money for the company by laying off more and more employees, but there is no real ending. The real power of the game regarding ethical gameplay lies in the fact that LAYOFF "seems to, at least in part, inspire productive dialogue between players. Yet the tension of ambiguity that LAYOFF imposes upon its players inspires a broad spectrum of interpretation [...]."[40] Of course, it depends on the players if they will think about reasons and personal consequences of laying off employees or being laid off. The game can also be played like any other of these swapping games (simply focusing on the highscore, which means saving company money), however, the game mechanics encourage reflection and create empathy. As the designers say, "many players read the biographies closely, turning every move into a dilemma."[41] This means the group of players who read the information provided about the characters usually take a long time to think about their moves "as they weigh the details of workers' personal lives against each other."[42] It is exactly this kind of thinking about the consequences of your decisions that make serious

37 Ibid.

38 Flanagan, Mary/Lotko, Anna: "Anxiety, Openness, and Activist Games: A Case Study for Critical Play," in: *Breaking New Ground: Innovation in Games, Play, Practice and Theory. Proceedings of DiGRA 2009*, 2009.

39 Ibid.

40 Ibid.

41 Belman, Jonathan, et al.: "Grow-A-Game: A Tool for Values Conscious Design and Analysis of Digital Games," in: *Proceedings of DiGRA 2011 Conference: Think Design Play*, 2011, www.digra.org/dl/db/11310.10534.pdf

42 Ibid.

games valuable for teaching morality. The only way to avoid firing workers is to avoid playing the game.

So it can be compared to SEPTEMBER 12TH,[43] a newsgame which was developed in reaction to the attacks of 9/11. This game, which wants to demonstrate that violence only causes more violence, has very simple instructions, which are stated at the beginning: "The rules are deadly simple. You can shoot. Or not." Two illustrations also show which non-playable characters should be regarded as terrorists and which are civilians. The game's setting is a busy marketplace where terrorists can be seen among civilians. Players control a what seems to be the scope of a sniper rifle. When aiming at a terrorist, a missile is launched. The bomb does not only kill the terrorists but also civilians which results in civilians mourning the victims. Consequently, more and more terrorists show up—developing from mourning civilians. "The only sense in which [the game] can be beaten is if the player realizes the futility of the playable character's one-dimensional approach to fighting terrorism."[44] The game intentionally confronts players to question the viewpoint taken by the playable character and seeks to transfer the experience made in the game to real life.

Another game that forces players to take the role of an evil person is *Sweatshop*.[45] This tower defense game presents players with the simulation of a sweatshop. The game was designed to reach teenagers in the UK and to inform them about the fashion industry. What the game wants to achieve, is quite a lot: "The game intends to educate its player as to the conditions of many of the workers in sweatshops [...]. It seeks to highlight the conditions of workers, but also inform as to the wider pressures that have brought this particular system into being, highlighting the role of clients, factory owners, managers and workers down the chain."[46] Players take on the role of the manager of the sweatshop and are responsible for quickly and correctly fulfilling orders for different kinds of clothing (hats, shirts, bags and shoes). You need to hire (or fire) workers (among them also children who are cheaper) and purchase support items (for example water coolers, fans and portable toilets). These support items help players to increase the output of the NPC workers who are within their zone of influence.

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43 SEPTEMBER 12TH (Newsgaming.com 2003, ●: Newsgaming.com)

44 M. Flanagan/H. Nissenbaum: *Values at Play in Digital Games*, p. 36.

45 SWEATSHOP (Channel 4 2011, ●: LittleLoud Studios)

46 Brown, Mark: "Q&A: Littleloud Talks Guilt and Gaming with Sweatshop," *Wired*, July 22, 2011, p. 8, http://www.wired.co.uk/news/archive/2011-07/22/sweatshop-q-and-a

They can also prevent NPC workers from becoming exhausted (water cooler) and can make the workshop safer so that there are fewer accidents. Scores are given according to the quality of the goods produced (if they are finished), time (you can speed up the conveyor belt), and cash earned. The game does not give any scores on caring for or protecting the workers. In order to win *Sweatshop,* players need to do things one would normally describe as immoral. One needs to exploit workers, make use of child-labor, and risk health and lives of non-playable characters to succeed in the game. But there is also a direct player-NPC connection. During the game, players are confronted with a child (visualized with oversized eyes expressing joy, fear, or sadness) explaining the bad working conditions at the workshop and repeatedly asking for understanding or even pleading for mercy. The reactions of this child relate to the player's actions in the game. On the other side, there is the figure of the boss who constantly scolds the player and asks for more output, warning the player to only consider workers' needs if that helps them work harder and more efficiently. One can compare these two NPCs to an angel and a devil attempting to convince players of doing what they think is best. Moreover, the game uses a karma meter showing the player how good or evil he is, depending on her performance during the game. The more workers get injured or even killed, the more likely it is that the player is regarded as evil. After each level players are confronted with facts about sweatshops, for example: "Over 75% of people working in clothing sweatshops are women. Many are mothers, and the long hours and little pay can often take its toll on their families. Children often see little of their parents, and in many countries can't be sent to school due to lack of money to afford to pay fees."[47]

The first levels of the game are quite easy to play and you do not think that much about the story the game wants to tell. As Ferrari[48] points out, it would be hard for any medium to show people what it means to work on a factory line for hours on end for bad payment. "SWEATSHOP's strategy is to pull you into the antagonist's mindset; it forces you into the cold logic of sweatshop management and leaves you to reflect on your own descent into it."[49] Putting the players in the shoes of someone who seems to be forced to abuse workers might result in players trying to work against the game. As Dixon writes about the game when he

47 SWEATSHOP (Channel 4 2011, ●: LittleLoud Studios)

48 Ferrari, Simon: "The Frightening, Real-World Strength of Channel 4's 'Sweatshop' Game," *Mediashift,* July 27, 2011, http://mediashift.org/idealab/2011/07/the-frightening-real-world-strength-of-channel-4s-sweatshop-game207/

49 Ibid.

started to play it: "I took the job as plant manager with the intention of doing things differently. I would provide a safe environment for my workers. [...] I would not, under any circumstances, hire children. [...] I would not compromise my morals. [...] These commitments lasted about 15 minutes until I noticed that a slew of hats were in danger of being unfinished and I could only afford to play children to finish them. An hour later, I was completing a string of hats with nothing but children workers."[50] What this account shows is how fast morality and ethical principles are corrupted when you see that you cannot reach your aim. Of course, the game cannot be compared to reality and it was also heavily criticized as oversimplifying complex issues. As Timmerman writes, the game ignores poverty as well as the reasons for people working under such conditions. "To survive the game you'll have to employee [sic!] children and pay them less than an adult, but you never learn why it is that the child showed up at the factory in the first place."[51] Another problem Ferrari sees is that the lesson the game wants to teach (showing how badly you need to treat workers in order to maximize profit and how much money you can save by hiring children instead of grown-ups—all together not seeing workers as humans but as "pesky weak flesh in the way of the profit"[52]) is encountered rather late in the game and only by those players who want to go for gold medals (meaning that they achieve maximum profit in a level). However, what the game definitely does, is remind people that most retail clothing is produced under inhumane conditions and it shows that "[s]ometimes the wrong thing is the right thing for the company's bottom line."[53]

Reactions to SWEATSHOP are also quite interesting. Although the game developers stated that they wanted to make young people aware of the fact that many of the clothes they buy have been manufactured in sweatshops,[54] Apple removed the ioS version "stating that it was uncomfortable selling a game based

50 Dixon, Drew: "Human Dignity and the Bottom Line: Sweatshop," 2015, p. 1-2 http://gamechurch.com/human-dignity-and-the-bottom-line-sweatshop/

51 Timmerman, Kelsey: "New Video Game Lets You Be a Lord of the Sweatshop," *Wheremiwearing.com*, July 21, 2011, http://whereamiwearing.com/2011/07/your-sweatshop/

52 S. Ferrari: "The Frightening, Real-World Strength of Channel 4's 'Sweatshop' Game."

53 K. Timmerman: "New Video Game Lets You Be a Lord of the Sweatshop.", p. 11.

54 SWEATSHOP (Channel 4 2011, ●: LittleLoud Studios)

on the theme of running a sweatshop."[55] While developing the game, the design team worked with experts on sweatshops to make the experience as realistic as possible. That means, for example, that players have to make sure that the non-playable characters drink enough water—otherwise they will dehydrate (and of course not be able to work). The conditions shown in the game are quite accurate—fire might break out, there could be a lack of toilets, and workers might get hurt or even die in accidents. Throughout the game, facts on sweatshops are presented to make players aware of the bad situation the workers are in. Although Littleloud (the developing company) made sure that the game should only be regarded as an educational tool and "is a sympathetic examination of the pressures that all participants in the sweatshop system endure,"[56] Apple was not willing to offer the game for sale.

ETHICAL DECISION MAKING IN SERIOUS GAMES

One game that has been discussed positively when it comes to integrating ethical choices in serious games is THIS WAR OF MINE.[57] In contrast to many war games which belong to the genre of ego-shooters that glorify war, THIS WAR OF MINE makes players see war through the eyes of civilians who need to survive in a city destroyed by war. Snipers threaten the characters' lives during the day and there is a constant shortage of food, water, and medicine. Players start out with three characters in this survival war game and have to care for their health, find food, and attend to character mood. If the playable characters are sad or even depressed, they might stop listening to the player's commands and might even commit suicide. While being on the lookout for food and medicine at night, the player-controlled characters might meet other survivors (non-playable characters). Here, the player can decide if she wants to help, rob, or even kill these characters. As the website promises, players can "[m]ake life-and-death decisions driven by [their] conscience. [...] During war, there are no good or bad decisions, there is only survival."[58] If your characters are injured and sick, they

55 Parkin, Simon: "A Serious Game about Sweatshops ... You Won't Find It in Apple's App Store," in: *The Guardian*, 2013, http://www.theguardian.com/commentisfree/2013/mar/22/sweatshop-game-apple-app-store

56 SWEATSHOP (Channel 4 2011, ●: LittleLoud Studios)

57 THIS WAR OF MINE (Deep Silver 2014, ●: 11bit Studios)

58 Ibid., http://www.11bitstudios.com/games/16/this-war-of-mine

need a lot of resources—should you keep them alive? Should you steal food from neighbours in order to save your characters' lives but risk that your old neighbours starve (and, of course, such behaviour might affect your own characters' mood negatively). The player is quite free in deciding what to do and where to go, but is always accompanied by the feeling of fear and frustration as he/she never knows what might happen next. What is quite special about the game is the sympathy system that is embedded in the game mechanic. This sympathy system directs the personality of the playable characters and their reactions to moral choices made by the player (like committing crimes, helping people, etc.). The system is not visible but can be seen indirectly from the characters' comments in their profile. As the game knows what the player has done (how many items have been stolen, how many people have been helped or robbed), it is able to judge morality. This way it "actually responds to the player's own values—the player judges him or herself, and then the systems answer."[59] As players cannot calculate the consequences of their decisions in advance, the dilemmas presented within the game become harder and more interesting. They need to balance their own feelings and their game play choices.[60] THIS WAR OF MINE plays with destroying everything gamers are used to from "normal" videogames. One player said the following about his experience when playing the game:

"As I was trying to loot a grocery store, I came across a soldier harassing a young girl. He held her at gunpoint and was leading her to the back of the store planning to rape her. They hadn't noticed me yet, so I could have just continued to loot the store and get the supplies my group needed. But how could I leave? I always told myself that I could be a hero in these situations. If I feel like I can do that in real life, surely I can manage a simulation, right? I silently followed the two of them, picked up a shovel, and hit the soldier square in the back without any damage to his body armor. I tried again for the head, but he was wearing a helmet. A second later, my character was dead, two shots to the chest. For a brief moment, I considered the character's death was for a good cause, but I know that isn't true. The game carried on. My two remaining characters waited that morning and

59 Alexander, Leigh: "Gamasutra—The Secrets behind This War of Mine's Emotional Impact," *Gamasutra*, March 3, 2015, p. 7, http://www.gamasutra.com/view/news/237940/The_secrets_behind_This_War_of_Mines_emotional_impact.php

60 Ibid.

received no supplies. They were dead within three days. Thanks to my act of heroism, three people died, and I hadn't prevented a thing."[61]

As this account shows, the game is very effective in depicting reality and making people think about their ethical decisions. There is no easy way of finding a working strategy for winning the game, as is the case in most games where you know how you must behave in order to win or advance. As the designer of THIS WAR OF MINE stated in an interview: "Players feeling bad about their own actions will always carry more impact than a game telling people they did something reprehensible."[62] People playing the game might experience quite strong emotions or even feel remorse for making decisions that lead to unforeseeable consequences. THIS WAR OF MINE can thus be seen as an example of a serious game that includes ethical decisions which need to be reflected on by the players.

CONCLUSION

What the examples discussed have clearly shown is that ethical gameplay requires more than moral choices, as "it is about creating an entire system that engages the skills of moral sensitivity, judgement, motivation and action."[63] Games need to provide ethical challenges and include a narrative that enables players to deal with it. As Walk[64] points out, there are three parts that make up an ethical dilemma. First, the player does not know what decision is the right one to make. Second, the player's decision needs to violate an ethical principle. No matter what decision the player makes, she must regret having made that deci-

61 Sell, Jesse: "Emotion and Play in This War of Mine," *MIT GameLab*, January 27, 2015, p. 8, http://gamelab.mit.edu/emotion-and-play-in-this-war-of-mine/

62 Campbell, Colin: "This War of Mine and the Puzzle of Remorse," *Polygon*, March 4, 2015, http://www.polygon.com/2015/3/4/8145077/this-war-of-mine-and-the-puzzle-of-remorse

63 M. Ryan/D.Staines: "Ethical Choices in Videogames: Lessons from Moral Psychology."

64 Walk, Wolfgang: "Ethik Als Spielmechanik#2—Ethik Und Moral Als Konfliktparteien," *Der Blindband*, January 21, 2015, https://thevirtualmirror.wordpress.com/2015/01/26/ethik-als-spielmechanik2-ethik-und-moral-als-konfliktparteien/

sion. Third, there needs to be time-pressure for choosing an option. Sicart[65] even adds some more requirements for games, like not evaluating the player's decision by giving points, the impossibility of going back after having made a decision (so the decision should be irrevocable), and the dilemmas should be unique. Ethical decisions have been integrated into many commercial games—more or less successfully. For serious games, however, tackling moral issues and integrating meaningful choices for players is something that opens up a wide potential because games, like the examples mentioned in this article, might encourage players to think about serious topics like surviving as a civilian during war or the forces responsible for sweatshops. Serious games do not need to rely solely on high-end graphics (as shown in SPENT) and extensive narratives (as shown in LAYOFF and SWEATSHOP) in order to make players think about the decisions made in gameplay. Of course, a game like THIS WAR OF MINE, which includes a sophisticated sympathy system, can do a lot more when it comes to challenging players to reflect on situations and decisions made in moral dilemmas.

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Moral Dilemmas in Digital Games

JEFFREY WIMMER

HOW COMPUTER GAMES CAN PROMOTE ETHICAL REFLECTION

Classical game theories illustrate that the game phenomenon has always been seen as a significant source of human self-awareness. From this perspective, the act of gaming manifests itself as an elementary component of human culture. Games possess the power to not only trigger cultural processes, but to influence them as well. Digital games, in the form of today's computer games, should also not be underestimated in having an impact on individual personal development, and in turn, on social and societal contexts.[1] As they now play an integral role in the media repertoire of a majority of the population,[2] the question is not so much "if, but rather how they can potentially change the social behavior of individuals and how people coexist."[3]

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3 Krotz, Friedrich: "Computerspiele als neuer Kommunikationstypus: Interaktive Kommunikation als Zugang zu komplexen Welten," in: Thorsten Quandt et al. (eds.), *Die*

Computer games offer players a complex, structured experience. This in turn allows players room for creating meaning and other learning processes, which, in addition to game logic and experience, always refer also to the contexts of representation and appropriation.[4] This structured experience, however, cannot be considered in isolation. Instead, it is only analytically graspable through playing behavior and game practices. Prototypical examples are the various virtual interactions and chat spaces in the world of online gaming. These shape the awareness of gamers is many ways. This applies to their sense of time, attention control, the forming of emotions, relevance and guidance models.[5]

For players, the mediated worlds of computer games represent a living environment for self-construction, identity experimentation and shared experience. These worlds can be understood as a kind of social laboratory free from physical and real-world obstacles. Despite their mediated nature, however, these communicative processes of constructing meaning are no less physically and psychologically powerful under certain conditions and in specific contexts, and are from a real world point of view constructive for both identity and community. Seen in this way, virtual entry into the computer game world—beyond dispersion and mere entertainment—is not only an act of individual perception, but it also possesses deep ethical and moral character under the described conditions. From this perspective, the previously neglected research question of ethical implications of computer games plays a significant role.[6]

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6 Sicart, Miguel: *The Ethics of Computer Games*, Cambridge: MIT Press 2009; Zagal, Jose P.: "Ethically Notable Videogames: Moral Dilemmas and Gameplay," in: DiGRA (ed.), *Breaking New Ground: Innovation in Games, Play, Practice and Theory. Proceedings of DiGRA 2009*, accessed February 28, 2016, http://www.digra.org/wpcontent/uploads/digital-library/09287.13336.pdf

COMPUTER GAMES, ETHICS AND MORAL DILEMMAS

Computer games can be understood as both moral objects and agents of ethical values. At closer inspection, not only are ethical values and moral statements rooted in their design, but they also mediate them.[7] Game narratives, rules, achievements or high scores suggest what is to be considered both right and virtuous. This aspect is closely connected to the game experience. Therefore, the morality of computer games lies not only in what they tell, but also how they tell it.

This complexity can be illustrated by the third level of the military ego-shooter game CALL OF DUTY: MODERN WARFARE 2 from 2009.[8] It includes one of the most controversial and most discussed scenes in the history of digital games. In this very provocative yet elaborately designed stage of the game, the player, set in the role of a US American secret agent, is involved in a massacre by Russian terrorists. This act of terrorism in the game is the starting point for a global military conflict between the USA and Russia. The player has three options:

- In order to maintain cover, the player can participate in the shooting of helpless civilians.
- The player can decide not to shoot, and instead simply follow the other terrorists through the game world.
- The player can shoot the terrorists. If the player decides to do this, the cover is blown. The role is not successfully filled and the game ends.

In the censored version of the game, such as in Germany, it is forbidden to shoot civilians. In the uncut version, however, this option is the most logical option from the perspective of the game narrative. The empirically unresolved question that arises from this situation is to what extent the player distances, or can distance, his or herself from the virtual brutalities of the event. Without this distance, the game experience—simulating participation in existential actions—does not work.[9] Another game in which the discussion of morality in computer

7 M. Sicart: *The Ethics of Computer Games*.

8 CALL OF DUTY: MODERN WARFARE 2 (Activision 2009, o: Infinity Ward)

9 Spieler, Klaus: "Ethik der Computerspiele: Computerspiele in Kultur und Bildung," in: Stephan Günzel et al. (eds.), *DIGAREC Lectures 2008/09*, Potsdam: Potsdam Uni-

games manifested itself prominently, is a game from 2003 called MANHUNT.[10] Here, the player plays the role of a convicted criminal who is ransomed by a media mogul to murder people on camera. What is particularly controversial is that the player can determine the degree of violence used, which is then further explicitly represented. Consequently, the game was indexed by the German Federal Review Board for Media Harmful to Minors. In this case, however, there are also opinions that would even classify the game as ethically noteworthy as it allows for a change in perspective and forces the player to come to particular moral decisions.[11] Apart from these two prominent examples of integrating elements of moral decision-making into the game, there has recently been an upsurge in game concepts that put the player in the position to make moral decisions, often in the form of moral dilemmas that can greatly influence the course of the game. In such a constellation of decisions—if one follows the analytical approach of some game researchers—there lies a great potential for establishing a kind of ethical gaming experience. This is because the player's decisions within the game, and their underlying values, transform them to ethical actors, and therefore create a moral gaming experience. Examples include games and games series such as DEUS EX,[12] FABLE,[13] GTA,[14] MASS EFFECT,[15] STAR WARS: KNIGHTS OF THE OLD REPUBLIC,[16] THIS WAR OF MINE,[17] FATE OF THE WORLD[18] and SPEC OPS — THE LINE, among others.[19]

The basic idea of a moral dilemma can be defined as a predicament in which someone has a choice between two or more options.[20] The alternatives generate

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versity Press, 2009, pp. 84-92, http://opus.kobv.de/ubp/volltexte/2009/3329/pdf/digarec02_S084_092.pdf, accessed February 28, 2016.

10 MANHUNT (Rockstar Games 2003, ●: Rockstar North)

11 J. P. Zagal: "Ethically Notable Videogames".

12 DEUS EX (Eidos Interactive 2000, ●: Ion Storm Austin)

13 FABLE (Microsoft Studios 2004, ●: Lionhead Studios)

14 GRAND THEFT AUTO (Rockstar Games 1997, ●: DMA Design/Rockstar North)

15 MASS EFFECT (Microsoft Game Studios/Electronic Arts 2007, ●: BioWare)

16 STAR WARS: KNIGHTS OF THE OLD REPUBLIC (LucasArts 2003, ●: BioWare)

17 THIS WAR OF MINE (Deep Silver 2014, ●: 11 Bit Studios)

18 FATE OF THE WORLD (Red Redemption Ltd/Lace Mamba Global 2011, ●: Red Redemption Ltd)

19 SPEC OPS: THE LINE (2K Games 2012, ●: YagerDevelopment)

20 Lind, Georg: *Moral ist lehrbar. Handbuch zur Theorie und Praxis moralischer und demokratischer Bildung*, Munich: Oldenbourgh 2003, pp. 78ff.

from the fact that, due to a contradiction between the norms and values of the acting person and the norms and values of another frame of reference, a conflict arises in which the acting person feels lost and cannot decide which way he or she should go.[21] Sellmaier speaks of three general aspects that make up a moral dilemma.[22] On one hand is the lack of a clear guideline, and on the other hand is the need for moral failure. The acting person is therefore compelled, regardless of what he or she decides, to violate a moral principle.[23] This moral failure always leads to guilt and remorse for what has been done.[24] Third, a decision includes an emergency situation, in which not deciding has significantly worse consequences than the competing options.

CHARACTERISTICS OF MORAL DECISIONS IN DIGITAL GAMES

What is the particularity of moral dilemmas that apply to game context? In reference to the Aristotelian concept of phronesis, Schulzke postulates that games and their numerous decision-making situations have inestimable educational value.[25] By way of moral actions during the game, players gain practical experience with morally correct decisions or can evaluate their actions by experiencing the consequences of immoral decisions. The gaming experience also touches on the intellectual and emotional attitudes of the player as he or she is essentially forced to interact with the specific rules and ethics of play.[26] Under this assumption, moral dilemmas within the game can sensitize players to real-world moral dilemmas, and as a result, promote ethical reflection.

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21 Statman, Daniel: *Moral Dilemma*, Amsterdam: Rodopi 2003, p.7.

22 Sellmaier, Stephan: *Ethik der Konflikte*, Stuttgart: Kohlhammer 2008, pp. 38 ff.

23 G. Lind: *Moral ist lehrbar*, p. 18 ff.

24 Railton, Peter: "The Diversity of Moral Dilemma," in: H.E. Mason (ed.), *Moral Dilemmas and Moral Theory*, New York, Oxford: Oxford University Press 1996, p. 153.

25 Schulzke, Marcus: "Moral Decision Making in Fallout," in: *Game Studies* 9/2 (2009), http://gamestudies.org/0902, accessed February 28, 2016.

26 Pohl, Kirsten: "Just a Game? Simulating Moral Issues," in: Sybille Baumbach et al. (eds.), *Literature and Values. Literature as a Medium for Representing, Disseminating and Constructing Norms and Values*, Trier: WVT 2009, p. 279.

The factor *consequences of action* can be regarded as a decisive factor.[27] As a negative example of this, Sicart[28] refers to the surprisingly popular and critically acclaimed role-playing shooter BIOSHOCK.[29] In this game, players are faced with the decision of killing "little sisters" (avatars of young children) in order to gain ADAM (a resource within the game), which will make them more powerful. If a player chooses not to kill, he or she receives only half of the available ADAM. Sicart argues that this game scenario only presents an ethical decision at first sight; its implementation is incomplete as the player's decision has ultimately no effect on the course of the game.[30] Additionally, there are no reactions of computer-controlled avatars during the game which would determine the moral point-of-view of the player and would give meaning to the player's decision. Therefore, Sicart assumes that players are acting according to the game's logic—that is to achieve objectives as efficiently and effectively as possible—instead of making decisions dependent on moral bearings. A changed distribution of game resources—comparable to a slight cosmetic correction—would be not considered enough of a consequence to make the player feel the weight of his or her actions.

Sicart additionally points out the important factor of technical integration of good and evil of the player's actions into computer games which could be achieved with the help of both visible and invisible moral evaluation systems.[31] The systematic and visible evaluation of player actions, for example through the display of *karma points* or from avatar facial features, could detain players from taking responsibility for every moral action. Following this assumption, the process of self-evaluation would be considered as another regular element of gameplay, and it would play no special part in the moral reflection that a player experiences. This is because with the implementation of a visible moral system, the player would only make decisions that the game evaluates.[32] Pohl illustrates with her case study of FABLE[33] that a simplified division of good and evil actions is not conducive to morally involving a player in the game.[34] Neither course of

27 M. Schulzke: "Moral Decision Making in Fallout."

28 M. Sicart: *Ethics of Computer Games*, pp. 159f.

29 BIOSHOCK (2K Games 2007, ●: 2K Boston/Australia/Marin)

30 M. Sicart: *Ethics of Computer Games*, p. 159.

31 Ibid.

32 Ibid., p. 212.

33 FABLE (Microsoft Studios 2004, ●: Lionhead Studios)

34 K. Pohl: "Just a Game? Simulating Moral Issues," p. 117.

action creates doubt or ambivalence in a player since the player can predict in advance how his or her actions will be evaluated, nor are none of the options ultimately linked to a restrictive consequence.[35]

So, how can a moral dilemma be well-depicted in a computer game? Zagal argues that rewarding specific points, for example, does not create a moral dilemma, as the decision is based more on the basis of game mechanics than on ethical guidelines. In general, he says that a moral dilemma only exists if the player has the direct decision-making power over the outcome of an ethical conflict. A decision based on previous gameplay is therefore excluded.[36] Pohl mentions another categorization that defines two depictions of moral dilemmas within a game.[37] On the one hand, there is a fundamental conflict of having to make a decision that affects the course of the game, and on the other hand, there is an explicit simulation of a moral situation that is implemented into the structure of a game. The transfer of responsibility to the player and the necessary assessment of his or her decisions are seen as a form of a moral situation simulation. The explicit declaration of the player's decision being either good or evil is seen as another form of simulation of a moral situation.[38]

The player has strict rational reasons for choosing an option, but every decision is also an individual and emotional decision for the player. Therefore, each player assesses him- or herself and behaves differently in particular game scenarios.[39] A prototypical scenario for a moral dilemma is one with the potential for good and evil decisions that have a significant impact on the course of the game. However, the player should not obtain complete information over the details of the dilemma, for example when the true intentions of a computer-controlled non-player character (NPC) remain hidden from the player, or are first seen later in the game.[40] With little information available, moral dilemmas are more challenging for players and are thus more conducive to the reflection of moral actions. Pohl also mentions a similar scenario that, in her opinion, makes a game morally valuable.[41] This requires players to answer, consciously or unconsciously, for their morality. This would be the case if in a game "the player is forced to make

35 Ibid., p. 118.

36 J. P. Zagal: "Ethically Notable Videogames," p. 7.

37 K. Pohl: "Just a Game? Simulating Moral Issues," p. 284.

38 Ibid., p. 285.

39 Ibid., p. 284.

40 M. Schulzke: "Moral Decision Making in Fallout", p. 9f.

41 K. Pohl: "Just a Game? Simulating Moral Issues," p. 119.

an uninformed decision and/or has to accept consequences that are irreversible or create a situation that, under different circumstances, would not exist."[42] Important for a moral decision in a game is therefore to connect an ambiguous situation with fixed player restrictions,[43] thereby personally involving the player in the game.[44]

LIMITATIONS AND OUTLOOK

The extent in which players accept these moral decision-making situations cannot be answered at this point. An exploratory survey from Lange shows, for example, that players prefer the good path as well as player reincarnation as opposed to evil.[45] The basic settings of a game or a current emotional state could also significantly influence decisions within a game. For example, it is unclear to what extent an emotional connection in the game can influence player decisions during a dilemma. Assuming a player is emotionally involved in a game, moral dilemmas may have a completely different effect on a player. A decision in a particular area may be simplified, while in another it may be more difficult. A life or death situation has a completely different meaning to a player if they have an emotional attachment with an NPC, or as Hablesreiter claims, if the player were to lose a 'virtual friend' from a decision.[46] Even if the decision has no impact on the course of the game, it can still affect the player: a player might feel guilty about a particular decision and, at least on an emotional level, experience an altered form of game play. It is also analytically stronger to consider that any gaming experience and evaluation is embedded in real-world contexts. Page has identified this important context factor in his analysis of Chinese computer gamers, among whom virtual killings are judged as morally positive in the context of

42 Ibid.

43 Ibid., p. 199f.

44 Ibid., p. 279.

45 Lange, Amanda: "'You're Just Gonna Be Nice': How Players Engage with Moral Choice Systems," in: *Game Criticism* 1/1 (2014), http://gamescriticism.org/articles/lange-1-1, accessed February 28, 2016.

46 Hablesreiter, Roland: *Film vs. Computerspiel—Storytelling als gemeinsame Stärke*, Master Thesis, Film Academy Vienna 2010, p. 120. http://storage.maehring.at/TEMP/Diplomarbeit_Roland_Hablesreiter_100428.pdf, accessed February 28, 2016.

neoliberal reforms in China.[47] To enable ethical and moral reflection, not only should conflict in future games be comprehensibly portrayed and moral decisions explicitly required, but their impact on the game world as well as players should also be strictly enforced so that players can learn to evaluate their ethical and moral attitudes. An ideal scenario for a moral dilemma is one with the potential for good and evil decisions that have significant consequences for the course of the game.

This paper focused strongly on player and game-oriented dimensions of computer game ethics that will continue to gain relevance as popularity of computer game ethics increases. Apart from these inherent ethical aspects of the game, further issues regarding media ethics at the meso and macro levels of digital game ecology can also be formulated, in which theoretical and empirical answers have yet to be provided: What is, for example, the ethical responsibility of game developers and the gaming industry in regards to individual games and society in general? What role, if any, can games play as critical, cultural correctives compared to other (traditional) mass media games?

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47 Page, Richard: "Leveling Up: Playerkilling as Ethical Self-Cultivation," in *Games and Culture* 7/3(2012), pp. 238-257.

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SPEC OPS: THE LINE (2K Games 2012, O: Yager Development)

STAR WARS: KNIGHTS OF THE OLD REPUBLIC (LucasArts 2003, O: BioWare)

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The Good, the Bad, and the Inbetween

Using Digital Games for Ethics Education

ANDRÉ WESSEL, MAIKE GROEN

INTRODUCTION

In recent years, the use of digital games in educational contexts has been an enthusiastically discussed topic in the field of educational sciences and their subdisciplines such as media pedagogy. Even though results of empirical research concerning the effects differ widely,[1] digital games have been used in learning environments for several years now, usually in order to enhance logical thinking and problem solving skills as well as spatial imagination. In Germany and other countries, the game MINECRAFT[2] has had a great impact within both informal settings pertaining to children and youth work[3] as well as within formal settings such as compulsory education.[4]

1 Sherry, John L.: "Debating How to Learn from Video Games," in: Rachel Kowert/Thorsten Quandt (eds.), *The Video Game Debate: Unravelling the Physical, Social, and Psychological Effects of Digital Games*, New York/London: Routledge 2016, pp. 116-130.

2 MINECRAFT (Mojang 2009, ●: Mojang)

3 Schölzel, Stephan: "Lego● + Minecraft", in: Eike Rösch et al. (eds.), *Medienpädagogik Praxis Handbuch: Grundlagen, Anregungen und Konzepte für Aktive Medienarbeit*, München: kopaed 2012, pp. 154-159.

4 Förster, Klaus-Tycho: "Raumgeometrie mit Minecraft: Raumvorstellung und kreative Kooperation zu Beginn der Sekundarstufe I" [Spatial Geometry with Minecraft: Spatial Perception and Creative Cooperation at the Beginning of Secondary Education],

In light of the aforementioned data, teaching the abilities to think critically about ethical issues and to act according to moral criteria seems to be underestimated in the German education system, regardless of the use digital games. There is no compulsory school subject focussed on dealing with ethical questions, at most it is included into comparatively neglected secondary subjects like religion and philosophy which are not even a part of the school system in every region. Nevertheless, ethical issues do affect a great variety of areas of life, whether it is the political handling of refugees, the debates about corporate social responsibility in economy, or the hazardous potential of social media phenomena such as fake news, to name just a few. The capabilities for ethical reflexivity and moral reasoning are an integral part of human development towards becoming a responsible and empowered citizen who can participate in democratic processes and engage in civil society.[5] In this context, ethics education[6] is an important contribution to the strengthening and securing of a democratic society. Therefore, questions arise about how these skills can be taught and how young people can be sensitized to ethical issues. Since digital games have been suggested to be relevant and effective for learning in various contexts, and since a number of studies have shown the successful use of other media in ethics education, it seems obvious that digital games can be used as a tool for moral pedagogy.[7] In an attempt to illuminate this topic, this article will present some examples by showing which ones and how. First, we will take a look at the concepts of media pedagogy and media education, referring to the definitions of Fromme, Bier-

in: Gesellschaft für Didaktik der Mathematik (ed.), *Beiträge zum Mathematikunterricht 2012*, accessed March 29, 2017, http://dx.doi.org/10.17877/DE290R-12373; Bos, Beth/Wilder, Lucy/Cook, Marcelina: "Learning Mathematics through Minecraft", in: *Teaching Children Mathematics* 21 (2014), pp. 56-59, doi: 10.5951/teacchilmath.21.1.0056.

5 Nussbaum, Martha: *Not for Profit: Why Democracy Needs the Humanities,* Princeton, NJ: Princeton University Press 2010.

6 In this article, we will talk about ethics and moral education. Although both terms originate from different philosophical concepts, broken down in an educational context, their goals and especially the pedagogical methods are fairly similiar. For the sake of the argument and the straightforwardness of the article, we will therefore reference both in a similar fashion.

7 Schrier, Karen: "EPIC: A Framework for Using Video Games in Ethics Education," in: *Journal of Moral Education* 44 (2015), pp. 393-424.

mann, and Kiefer.[8] Then, we will point out some essential goals and strategies for ethics education with the help of Schrier's EPIC framework.[9] Finally, we will bring the different approaches together by giving examples for the practical use of digital games in moral education.

MEDIA EDUCATION WITH DIGITAL GAMES

Media pedagogy consists of three central areas of work and research, which at the same time define the main topics for the discussion about the educational possibilities of digital games.[10] First, the area of media socialization includes the description and contemplation of the media-specific use and fascination with digital games. Second, the developing of approaches to use digital games in education is an attribute of media didactics. Third, considerations about and concepts for the application of digital games in (media) pedagogical practice are assigned to media education, an area of media pedagogy that is of particular relevance to the present article. Media education aims at fostering competent and critical acquisition of media and deals with the development and application of concepts for intentional pedagogical action including the usage of media. Education refers to the basic pedagogical process in which educators interact with children, adolescents, or other target groups in order to encourage improvement and completion of knowledge and skills which are considered necessary or important for individual action and participation in society. Hence, it can be concluded that media education has no intention to normatively influence people, but to stimulate and support self-determined and self-responsible media usage.[11]

Nevertheless, the goals of media education are diverse. It seems obvious that young people need to be protected against certain risks like potentially dangerous content or excessive usage behaviour. In our opinion, this should not be the only benefit of modern media education, but its goals should be defined more broadly. Hence, media education should—like all education—contribute to the ability of a person to act competently, self-determinedly, critically, and socially

8 Fromme, Johannes/Biermann, Ralf/Kiefer, Florian: "Computerspiele" [Computer games], in: *Enzyklopädie Erziehungswissenschaft Online* (2014), accessed April 22, 2017, pp. 1-45, doi: 10.3262/EEO18140326

9 K. Schrier: "EPIC."

10 J. Fromme et al.: "Computerspiele," p. 7.

11 Ibid., p. 24ff.

responsible (in the context of media). These goals are brought together in the concept of media competence. This concept not only considers technical, but also analytical, social, and design-oriented capabilities,[12] which lead to, as Jenkins et al. have summed up, "enabling participation".[13] In order to clarify how these goals can be implemented into pedagogical practice, we will take a look at some media educational concepts that have been applied to the field of digital games. Having reviewed the relevant literature since the middle of the 1990s, Fromme et al. have defined five categories of practical approaches in media education.[14]

The first category has its focus on media studies and contains approaches for information about, and orientation within, the area of digital games. It primarily comprises offers for parents and educators that provide basic knowledge on the phenomenon of digital games, including information on usage, impact, and other aspects. The initial consideration here is that many adults lack basic knowledge about the digital gaming worlds in which children and adolescents move around. Acquiring this kind of knowledge is a prerequisite for the development of adequate forms of media education on one's own authority.

Experience-oriented approaches with a focus on media use form the second category, bringing together the conceptual components of knowledge transfer and digital gaming experience. This may include competitions in certain digital games, LAN (Local Area Network) parties, or establishing regular gaming groups. The idea is to open up educational settings for media and everyday culture of children and adolescents, combined with the idea that changing the digital gaming environment will have an impact on the experience of playing. Furthermore, such experience-oriented approaches offer a variety of connecting points, not only for follow-up conversations between young people and educators, but also for participation in the preparation and realization of such projects.

The third category aims at the development of a critical-reflective judgement capability towards digital games, and therefore has its focus on media literacy and media criticism. It provides approaches for the analysis of and reflection on digital games. Projects and concepts with this focus are also experience-oriented

12 Baacke, Dieter: *Medienpädagogik* [Media Pedagogy]. Tübingen: Niemeyer 2007, 96ff.

13 Jenkins, Henry/Clinton, Katie/Purushotma, Ravi/Robison, Alice J./Weigel, Margaret: *Confronting the Challenges of Participatory Culture: Media Education for the 21st Century*, Chicago: McArthur Foundation 2006, p. 7.

14 J. Fromme et al.: "Computerspiele," p. 28ff.

in most cases, i.e. they do not follow an instructive concept, but rather connect to the target group's digital gaming experience in an educational setting and then encourage analysis and reflection on the digital game, e.g. via the creation of reviews by use of certain methods and instruments. The goal of the process is to obtain digital game literacy to a certain degree, forming the basis for a self-determined and critical usage of digital games.

The projects and approaches assigned to the fourth category go one step further, since they try to trigger new types of experience beyond those intended by the developers through the creative use of digital games. These transformative concepts may include changing the goal, e.g. by arranging a speed running competition in a digital game in which the time limit normally is not crucial. It is also possible to switch the game type by converting it into a board game or an outdoor game. The pedagogical consideration behind this approach is to change and widen the player's digital gaming experience through a creative transfer process.

The fifth and last type can also be classified as a creative use of digital games, though part of the tradition of active media work. Children and adolescents are encouraged to produce their own digital games or modify existing ones by using level editors, modding, or machinima. The pedagogical consideration behind such productive and design-oriented approaches is that they enable particularly complex experiences and learning processes. Additionally, they comply with the desire of newcomers to actively participate in the (media) world.

All five categories can be used to reach certain educational goals that have been defined in advance. Which ones these might be in the area of ethics education will be shown in the following section.

ETHICS EDUCATION WITH DIGITAL GAMES

There are several approaches to use digital games as a means for ethics and moral education. Based on the Four Component Model of Moral Functioning by Rest et al.,[15] Staines uses a Neo-Kohlbergian approach as a tool to critique the moral content in three digital games.[16] In contrast to Kohlberg's cognitive-

15 Rest, James R./Narvaez, Darcia/Bebeau, Muriel J./Thoma, Stephen J.: *Postconventional Moral Thinking: A Neo-Kohlbergian Approach*, Mahwah, Erlbaum 1999.

16 Staines, Dan: "Videogames and Moral Pedagogy: A Neo-Kohlbergian Approach," in: Karen Schrier/David Gibson (eds.), *Ethics and Game Design: Teaching Values through Play*, Hershey, PA: IGI Global 2010, pp. 35-51.

developmental paradigm that measures a person's moral maturity according to the sophistication of one's moral reasoning competence and the capacity to make rational moral judgments, the Four Component Model comprises four key psychological components: moral sensitivity as the ability to recognize and respond to moral phenomena; moral judgement as the capacity to engage in moral reasoning and make moral choices; moral motivation as the desire to act on moral decisions and focus on them at the exclusion of other concerns; and moral action as the ability to act on moral decisions and see them through.[17] According to the model, there are seven skills assigned to each component that must be trained for becoming a complete moral agent in the respective area. Staines believes that "by virtue of their interactivity and capacity to simulate personal, social, and emotional contexts, [digital games] are particularly suited to cultivating expertise in each of the above listed ethical skills."[18]

However, sometimes the threshold for educators to use digital games in educational contexts is relatively high because there is a significant degree of uncertainty about what games can be adequately used to achieve a particular learning goal. For this purpose, Schrier has developed a framework to support the selection and application of suitable digital games in the field of ethics education. Based on a major review of relevant ethics and education frameworks from Kohlberg,[19] Rest,[20] and others, as well as of ethics and games frameworks from Sicart,[21] Zagal,[22] and others, Schrier's Ethics Practice and Implementation Categorization (EPIC) framework distinguishes seven educational goals in the context of moral pedagogy and twelve strategies to implement these goals into educational settings.[23]

The first goal is to help people recognize the ethical and moral character of their own decisions and actions by enhancing their ethical awareness. This in-

17 Ibid.: p.36.

18 Ibid.: p. 38.

19 Kohlberg, Lawrence: "Stage and Sequence: The Cognitive-Developmental Approach to Socialization," in: David Goslin (ed.), *Handbook of Socialization Theory and Research*, Chicago, IL: Rand McNally 1969, pp. 347-480.

20 J. Rest et al.: *Postconventional Moral Thinking*.

21 Sicart, Miguel: *Ethics and Computer Games*, Cambridge, Mass.: MIT Press 2009.

22 Zagal, José P: "Ethically Notable Videogames: Moral Dilemmas and Gameplay," in: *Proceedings of the 2009 Digital Games Research Association International Conference (DiGRA)*, London 2009.

23 K. Schrier: "EPIC," p. 403.

cludes various sub-steps, e.g. identifying ethically relevant issues and moral dilemmas, considering different perspectives, interpreting the situations in an appropriate way, and thinking about possible causes and effects.[24] In the Four Component Model, Rest et al. summarize these steps among the stage of acquiring moral sensitivity.

Since both positive and negative emotions are an integral part of ethical decision-making, especially in interpersonal and social situations, enhancing one's emotional intelligence is also helpful for making more profound moral decisions. Emotional intelligence means the ability to ponder emotions and, based on the resulting insights, to improve one's own thinking and sensitivity. According to Goleman's three-step model, emotional intelligence includes self-awareness, self-regulation, and empathy.[25] The abilities to care and to empathize with others are also fundamental components of moral development and ethical practice.[26] Empathy comprises four areas: first, the ability to automatically and unconsciously react to others, including participation in their emotional status; second, the cognitive capacity to take other views; third, the ability to regulate one's own emotions; and fourth, a particular level of self-/other-awareness that allows some temporary identification, but also avoids confusion.

Two more goals that are clearly similar to each other are the practice of ethical reasoning and the training of ethical reflection.[27] To assist people with the identification and practice of ethical reasoning means to help them with analyzing, interpreting, and evaluating ethical issues and situations, so that insights can also be applied in other contexts. Ethical reasoning includes skills such as "prioritizing, establishing pros and cons, evaluating the issue, analyzing evidence, identifying biases, and interpreting."[28] The main focus of practising ethical reflection lies in the deliberation on ethical issues and moral decisions as well as the consideration of their consequences and, in particular, the inclusion of how one's assumptions and information may have influenced the decision-making

24 Meng, Chan L./Othman, Jamilah/D'Silva, Jeffrey Lawrence/Omar, Zoharah: "Ethical Decision Making in Academic Dishonesty," in: *International Education Studies* 7 (2014), pp. 126-139.

25 Goleman, Daniel: *Emotional Intelligence*, New York: Bantam Books 1995.

26 K. Schrier: "EPIC," p. 405.

27 Lynn, Christine: "Teaching Ethics with an Integrated Online Curriculum," in: *Journal of Hospitality, Leisure, Sport, & Tourism Education* 9 (2010), pp. 124-130.

28 Schrier, Karen: "Ethical Thinking and Video Games: The Practice of Ethics in Fable III," PhD diss., Columbia University of New York 2011.

process and its results. It is an important presupposition of ethics education that learning and change in a person's thinking and acting cannot be triggered by a simple experience, but only by reflecting on it. These reflection processes only work under certain conditions. According to Schrier, it is difficult to implement moral thought and action when there are no corresponding foundations in the character of a person. That is why character enhancement is another goal of ethics education, i.e. to provide a basic understanding of concepts such as the treatment of others with dignity and respect, the sense of willingness to engage in citizenship, or values like "respect, responsibility, trustworthiness, caring, justice, fairness, civic virtue, and citizenship."[29]

And in the end, it may also be helpful for ethics education to provide some theoretical knowledge about various ethical concepts and traditions, such as the ethics of justice, the ethics of care, utilitarianism, or deontology, to name just a few. The facility of major ethical issues, approaches, and frameworks should be cultivated so that a well-founded examination of ethically relevant facts and situations can take place.[30]

To reach these goals, Schrier suggests twelve strategies that are on the one hand related to effective ethics education, and on the other hand applicable in the context of digital games.[31] She identifies various games that fit the strategies, stating that in many cases the strategies overlap and can be subsumed or integrated into others, or that different strategies can be used with the same digital game. Some strategies aim at helping people to practise empathy-related skills, to become more emotionally aware or to achieve a better understanding of one's own and other people's ethical perspectives, e.g. role-taking and role-playing, the use of emotion, mood, and tone, or the presentation of a narrative that contains moral issues. Other approaches are related to the results of moral action, e.g. when a digital game provides the simulation of an ethical system or a key ethical issue, or when there are different choices and consequences one has to deal with. Some digital games help to make connections between in-game ethical issues and real-world problems which also seems to be a useful strategy to foster ethical thinking and decision-making skills.

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29 Sommers, Christina H.: "How Moral Education Is Finding Its Way Back into America's Schools," in: Christina H. Sommers/Fred Sommers (eds.), *Vice and Virtue in Everyday Life: Introductory Readings in Ethics*, Belmont: Wadsworth/Thomson Learning 2004, p. 506.

30 K. Schrier: "EPIC," p. 407.

31 Ibid.: p. 403.

With her EPIC framework, Schrier makes an important contribution to the area of moral pedagogy with digital games. She establishes a framework to better identify and incorporate digital games into a learning environment, using specific strategies to reach specific goals. How this can work in practical media education will be discussed in the following chapter.

DIGITAL GAMES IN MEDIA EDUCATION FOR ETHICS

Some pedagogical projects aiming at the acquisition of skills related to ethics and morality already use the potential of digital games in media education. They use them as a starting point for debates on gender roles, sexuality, general moral issues, war, racism, or even specific topics like refugees. They are used as a tool to reflect on norms and values, to illustrate (mis-) representations and to create critical awareness about stereotypes. Working with digital games not only educates individuals about a specific topic, but indirectly stimulates media competence among participants. Talking about social behaviour and communication in games might help to prevent or discourage negative aspects like hate speech in multiplayer games.[32]

Although digital games offer these great learning surroundings, they are not commonly used in educational contexts.[33] To offer a first impression of the possibilities, this article presents three exemplary pedagogical projects which can be used as a starting point.

The Norwegian teacher Tobias Staaby developed a method to teach moral philosophy in classrooms.[34] He uses the post-apocalyptic adventure game THE

32 Groen, Maike/Schröder, Arne: "Crowd Control für die Gaming-Community. Formen der Begegnung mit nnerwünschtem Verhalten in MMOGs" [Crowd Control for the Gaming Community: Ways of Dealing with Toxic Behaviour in MMOGs], in: Winfred Kaminski/Martin Lorber (eds.), *Spielwelt—Weltspiel: Narration, Interaktion und Kooperation im Computerspiel; Clash of Realities 2014*, München: kopaed 2014, pp. 145-152.

33 Gee, James Paul.: "Why Are Video Games Good for Learning?," University of Wisconsin-Madison, accessed May 4, 2017, http://www.academiccolab.org/resources/documents/MacArthur.pdf

34 Staaby, Tobias: "The Walking Dead in School—Moral Philosophy after the Apocalypse," in: *Game Based Learning* 8 (2014), The Norwegian Centre for ICT in Education.

WALKING DEAD,[35] where the first episode of the game is free to play and already offers enough content for several school lessons. The transfer in the classroom is easy enough, since only one gaming device is needed: the class plays together by deciding through debate and votes, only watching one executing their conjoint decisions. Hence, the game functions not only as training tool for ethical thinking and identifying moral dilemmas, but also for learning how to debate. Considering James Gee's concept of "embodied empathy",[36] this game enables participants to change perspective in situations where the player's decisions dramatically matter (or at least seem to). The possible immersion in games, in this example mainly stimulated by the identification with the characters, is a key concept in Staaby's method to teach moral philosophy with THE WALKING DEAD.[37]

The game needs you to make decisions, usually even under time pressure. One student plays the game, while the classroom shouts what to do. When there are bigger moral dilemmas—like to lie or not to lie, to decide who should be saved, or how to treat a zombie-infected child—the educator pauses the game and the students form small debate groups for several minutes. The project is therefore "based on introducing the students to one ethical theory at a time, preferably right after encountering a dilemma but before deciding on a solution."[38] The longer the game continues, the more involved the students become with the characters and the more intense the debates and the learning outcome develop. This follows the suggested strategy 6 of Schrier[39] on how to teach ethics through games, since it helps to practice ethical reasoning as well as facilitates reflection on major ethical issues or approaches.[40] The method also fosters the four skill components of moral functioning suggested by Lapsley and Narvaez[41] based on Rest's Four Component Model[42] (1999), since it not only helps participants understand ethical problems, but also encourages them to reflect on processes and

35 THE WALKING DEAD (Telltale Games 2012, ●: Telltale Games)

36 J. P. Gee: "Why Are Video Games Good for Learning?," p. 4.

37 T. Staaby: *The Walking Dead in School*.

38 Ibid., p. 4.

39 K. Schrier: "EPIC," p. 411f.

40 Ibid., pp. 403, 408.

41 Narvaez, Darcia/Lapsley, Daniel K.: "The Psychological Foundations of Everyday Morality and Moral Expertise," in: Daniel K. Lapsley/F. Clark Power (eds.), *Character Psychology and Character Education*, Notre Dame, IN.: University of Notre Dame Press 2005, pp. 140-165.

42 J. Rest et al.: *Postconventional Moral Thinking*.

outcomes—based on how the situations are interpreted. Moral judgement and sensitivity are thus shaped by this method.

The German website "Digitale Spielewelten"[43] collects and distributes Open Educational Resources (OER) around the topics of media pedagogy with digital games and (re-)publishes them under a CC-licence. It offers some insight into how to re-use popular digital games in educational contexts and not only for entertainment.

For example, the method "Flucht nachvollziehen durch digitale Spiele" (what roughly translates as "Understanding refugees with the help of digital games"), created in 2016 with the so-called refugees crisis in Europe in mind, uses four different digital games to foster empathy through the changing of perspectives. It encourages reflection on reasons that might send someone fleeing—and all the hardship in of reaching a safer space like Europe.[44]

The first division of the method uses the game THIS WAR OF MINE,[45] which is set in a civil war scenario where the player has to help a small group to survive. Consequently, the player has to make hard choices throughout the game, such as: do I steal from others in order to survive? If so, whom do I steal from? The elderly? The sick? Whatever is decided—your group will suffer from exhaustion, depression, and diseases nonetheless. This experience of constant struggle and helplessness can offer a starting point for discussion about limited options and possible reasons to search refuge elsewhere. THIS WAR OF MINE does not only foster a connection with the avatars in a civil war, but also encourages (even forces) the player to take their perspectives, change their point of view, and question their knowledge and stereotypes about these kinds of situations.[46] Hence, it increases moral sensitivity just as much as moral action or motivation, because it cultivates one's conscience and helps one to think strategically.[47] Observing this game from the perspective offered by Schrier, THIS WAR OF MINE

43 "Digitale Spielewelten," accessed May 04, 2017, www.digitale-spielewelten.de

44 Brauchler, Tobias/Kröll, Fabian/Scharf, Hilmar: "Flucht nachvollziehen durch digitale Spiele" [Understanding Flight through Digital Games], accessed May 04, 2017, https://digitale-spielewelten.de/methoden/flucht-nachvollziehen-durch-digitale-spiele/135

45 THIS WAR OF MINE (Deep Silver, ©: 11 bit studios)

46 Weßel, André: "Ethik und Games: Möglichkeiten digitaler Spiele zur Reflexion moralischen Handelns" [Ethics and Games: Possibilities of Digital Games for the Reflection of Moral Action], in: *merz Wissenschaft* 60 (2016), pp. 123-34.

47 D. Narvaez/D. K. Lapsley: "The Psychological Foundations," p. 156f.

affords a variety of strategies for ethical learning. It transfers in-game knowledge to a real-world context, but also conveys "emotions in ways that help [...] see new perspectives."[48]

The second division of the educational project on refugees uses BEYOND: TWO SOULS[49] to make the students question what they would do while fleeing and whom they would choose to turn to for help. The third and last division uses two different games to highlight the obstacles while trying to migrate to a new country. In PAPERS, PLEASE,[50] the perspective is changed. The player is an immigration officer, upholding his countries immigration laws and refusing people's entry. This change in perspective prevents oversimplification of the subject of asylum seekers, offering a different angle on individuals caught up in border struggles while neither negating individual suffering nor responsibility. To contrast this experience, the authors of the method also suggest the use of LAST EXIT FLIGHT,[51] where the daily struggles to live in foreign countries as a refugee are depicted.

The last pedagogical method we present offers a good example for teaching ethics with the help of digital games in the area of gender issues. "Doing Gender—Geschlecht im Alltag," which translates into "Doing Gender as your daily grind," uses several games to illustrate how gender norms limit daily interactions.[52] MAINICHI[53] and DYS4IA[54] demonstrate vividly how society perceives people differently based on their ascribed gender and how this leads to enforced restriction of their movement in society. These two small browser games were created by developers who offer insight in their personal transgender experience via reflections and limited choices. They either work with symbolic sections on how society excludes and discriminates against people who do not fit into the gender-binary system (like DYS4IA) or confront the player directly with replayable experiences of what happens when you try to pass as something other than the gender that was ascribed to you at birth (like MAINICHI). These games

48 K. Schrier: "EPIC," p. 408.

49 BEYOND: TWO SOULS (Sony Computer Entertainment 2013, D: Quantic Dream)

50 PAPERS, PLEASE (3909 LLC, D: 3909 LLC)

51 LAST EXIT FLIGHT (UNHCR 2006, D: UNHCR)

52 Groen, Maike: "'Doing Gender'—Geschlecht im Alltag," accessed Mai 04, 2017, https://digitale-spielewelten.de/methoden/doing-gender-geschlecht-im-alltag/130

53 MAINICHI (Brice 2012, D: Brice)

54 DYS4IA (Newsgrounds 2012, D: Anna Antrophy)

offer an intriguing perspective on numerous educational ethical goals[55] (e.g. ethical awareness) and can enhance emotional intelligence within the suggested educational setting. This further encourages "moral motivation" and "moral sensitivity"[56] (in the words of Lapsley and Narvaez), since the player changes perspectives and, in so doing, cultivates a conscience, as one is forced to rethink one's stereotypes and socially created gender norms.

CONCLUSION

To sum up, digital games offer the possibility for creating flexible and easily accessible learning environments for ethical content and moral questions. This is especially true for young people who are already intrigued by the wide range of possibilities of digital games—which do not necessarily rely heavily on speech or text but rather tell stories through audiovisual content. The immersive effects can be a valuable tool for educational projects which attempt to shape ethical and moral reasoning. However, the range of media education projects using digital games could be extremely boosted if developers, publishers, and distributers would realize their potential and offer reasonable possibilities for educators to use them—since, for example copyright infringement, is still a very strict and serious matter, at least in Germany. Until then, inaccessibility and the lack of funding continue to be major restrictions.

Nevertheless, the possible immersion within games can also be a danger to adolescents when it comes to complex aspects of society (like racism, classism, or sexism). Difficult topics need to be deliberated, for example, in a pedagogical setting, to allow young people in particular to take a step back and critically question what content they enjoy—without taking away their motivation and enthusiasm for a diverse medium.

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THIS WAR OF MINE (Deep Silver 2014, O: 11 bit studios)

Bioethics and Biofacts in Digital Games

ARNO GÖRGEN

INTRODUCTION

Bioethics as an academic field studies (and performs) ethical reflections of research and practical applications of biology and the life sciences. This includes, aside from many other issues, questions and debates on the boundaries of life, i.e. questions of abortion or assisted suicide, but also of how to cope with new emerging technologies, so-called "socially and ethically contentious technologies (SECT),"[1] that might have an enormous impact on (human) life in the present and the future. In the field of bioethics, this includes first of all new developments in genetics, in particular, genetic engineering, but also the idea of implementing nanotechnology in medical therapy. The objective of bioethics is not only to reflect on the genesis of normative rules and perspectives, but also to enable a productive dialogue between science, policy and society.

Nevertheless, particularly in the context of emerging technologies like genetics and genetic engineering, translation problems occur since knowledge, perceptions and attitudes have not yet been institutionalized and canonized throughout society. Social actors of all kind are in a continuous process of technology assessment (TA), which in turn is based on the content and structural conditions and expectations of these actors. These distorted communications of bioethical problems can be traced back to differing, highly specialized modes of communication in science and society. Hartmut Winkler states that media as semiotic systems enable a comprehension of the world by reducing the complexity of

1 Cotton, Matthew: *Ethics and Technology Assessment: A Participatory Approach*, Heidelberg, New York, Dordrecht, London: Springer 2014, p. 2.

perceptions and experiences through media into a set of expectable structures.[2] As long as media and communication take part in social subsystems, they help to reduce the complexity of communication and of the allocation of knowledge through specializations of discourse. However, in the case of (i.e., scientific) developments, these systemic specializations lead to misunderstandings and uncertainty within intersystemic interfaces.[3] For example, Dahlstrom and Ho diagnose that entertainment media present new technologies rather on a narrative level and consciously reflect contingency. In contrast, representations of science, technology, and knowledge, which originate from science or science journalism usually are evidence-based and produce certainty. Starting from the concept of 'truth' they further explain that "[t]his different conception of truth mirrors the division between deductive and inductive reasoning: Whereas evidence-based argumentation uses abstractions to infer about particular examples, narrative uses particular examples to infer abstractions. This difference confusingly allows evidence-based argumentation and narratives with opposing assertions to claim equal levels of 'truth'."[4]

Nevertheless, because all members of a given society are involved in a shared popular culture, popular culture artifacts like movies, comics, digital games, etc. build a translational interface between science and society by implementing technoscience into its fictions. Andreas Lösch states, that, due to their different discursive origin, such pop cultural representations of (bio-)science function "as a means of communication between scientific, economic, and mass medial discourses."[5] They influence media, political, public and scientific agendas not only with formations of scientific knowledge,[6] but also with the respec-

2 Winkler, Hartmut: *Diskursökonomie: Versuch über die innere Ökonomie der Medien*, Frankfurt am Main: Suhrkamp 2004.

3 Leydesdorff, L.: "Metaphors and Diaphors in Science Communication: Mapping the Case of Stem Cell Research," in: *Science Communication* 27/1 (2005), pp. 64-99.

4 Dahlstrom, Michael F./Ho, Shirley S.: "Ethical Considerations of Using Narrative to Communicate Science," in: *Science Communication* 34/5 (2012), p. 595.

5 Lösch, Andreas: "Anticipating the Futures of Nanotechnology: Visionary Images as Means of Communication," in: *Technology Analysis & Strategic Management* 18/3-4 (2006), p. 394.

6 Kirby, David A.: "Cinematic Science," in: Massimiano Bucchi/Brian Trench (eds.), *Routledge Handbook of Public Communication of Science and Technology*, London: Routledge 2014, pp. 50-51.

tive terminology, with metaphors and images.[7] In addition, the 'gene' (genetics, respectively) in these representations has a polysemous quality, through which it can be "easily adapted to address prevailing social issues and political perspectives."[8]

In this paper, the ways in which digital games use representations of bioethics, of the life sciences and biotechnologies, how they are implemented on ludic and narrative levels and how effectively they function as a narrative technology assessment, shall be investigated by using a deductive and hermeneutical approach. After giving a basic understanding of the interrelations between science and society in a first step, I will then draft, how and under what premises popular culture assists these interrelations. Thirdly, games are introduced as an important popular cultural medium for simulations of formalized conflicts. By using the concept of "biofacts",[9] digital games will be analyzed with respect to their potential as biotechnological and/or bioethical possibility spaces.

SCIENCE, TECHNOLOGY AND SOCIETY

As citizens of highly industrialized societies, we are living in an era in which science and technology (or: technoscience) are perceived as the main promotors for successful civilizations. Technoscience is ubiquitous and strongly shapes the way we handle our lives. Due to the relevance of technoscience, and in order to comprehend why we can understand popular culture artifacts like games as seismographs of this ubiquity and its problems, it is important to think about the role of science and technology in our society.

Carl Mitcham, a philosopher of technology, states that humanity started from a state of more or less total embeddedness in nature. In a second step, settling and developing social systems and societies, proved to be a better, more effective way for survival and progress. Modernity as a third step is built upon the belief, that science and technology are the prime means for survival, develop-

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7 Nerlich, Brigitte/David D. Clarke/Dingwall, Robert: "Fictions, Fantasies, and Fears: The Literary Foundations of the Cloning Debate," in: *Journal of Literary Semantics* 30/1 (2001).

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9 Karafyllis, Nicole C. (ed.): *Biofakte: Versuch über den Menschen zwischen Artefakt und Lebewesen*, Paderborn: mentis-Verl. 2003.

ment and even welfare.[10] In this era, "[t]eclmology takes on the form of applied science (in engineering); science takes on the form of applied teclmology (from telescope and microscope to space probe and computer simulation). [...] What modern teclmoscience does is turn scientific theory to practical use for the purpose of altering nature at large and to as great an extent as possible."[11] Hence, teclmology and science are always thought together as 'technoscience'. In this perspective, the paradigm of modern scientific thought is applicability. As a result, games tend not only to neglect representations of the humanities or of social studies,[12] but also to represent science exclusively in connection with teclmology, while details on processes of research are usually spared. This demand for science and teclmology—always thought together—causes a limitless spiral of teclmologization, in which scientific limits are being questioned and surpassed with ease.

One consequence is that with the emergence of the SECT-teclmologies, mostly teclmologies like genetics, robotics, information teclmologies and nanoteclmologies, we entered an era in which we live with a constant state of post-normal science. The concept of post-normal science, developed by Funtowicz and Ravetz[13] has been developed in the context of Kulm's ideas of revolutions of scientific knowledge and the idea of paradigm shifts. According to this concept, science exists as 'normal science', which works within clear limits, foreseeable outcomes and institutionalized structures and modes of communication. But from time to time, contradictions of existing science paradigms are called into question. In these eras of revolutionary science, 'traditional' perspectives and paradigms shift and install the fundamentals for a new normal science. Funtowicz and Ravetz claim that "[m]uch of the success of traditional science lay in its power to abstract from uncertainty in knowledge and values [...]. Now scientific expertise has led us into policy dilemmas which it is incapable of resolving by itself. We have not merely lost control and even predictability; now we face

10 Mitcham, Carl: "Why Science, Technology, and Society Studies?," in: *Bulletin of Science, Technology & Society* 19/2 (1999), pp. 128-29.

11 Ibid., p. 129.

12 They are only implemented, if they can support the subject/character in fulfilling a task, i.e. by providing information through 'scientific' texts.

13 Funtowicz, Silvio O./Ravetz, Jerome R.: "Uncertainty, Complexity, and Post-Normal Science," in: *Environmental Toxicology and Chemistry* 13/12 (1994), pp. 739-55.

radical uncertainty and even ignorance, as well as ethical uncertainties lying at the heart of scientific policy issues."[14]

This concept of a post-normal science in which scientific outcomes and actions are uncertain and values at stake despite of their implementation into a normal, institutionalized science is called 'post-normal science'. It is primarily applied in the context of long-term issues where there is less available information than desired by stakeholders.

The extreme rifts in our understanding of what science can or cannot do (for example materialized in current progress of genome editing with the CRISPR/Cas9-method in genetics) enforce us to think about ourselves and about our role in the world, but also how we cope with our environment and how we deal with the consequences of technoscience for the world; we have to think about how to guarantee individual autonomy and justice not only to people who freely choose to use such new technologies, but also to those, who are not able or who don't want to use these technologies.[15] To counter the perils of post-normal science an approach of science communication and science assessment, which is "socially distributed, application-oriented, transdisciplinary, and subject to multiple accountabilities,"[16] has been demanded.

POPULAR CULTURE AND TECHNOLOGY ASSESSMENT

To cope with this new perception of risks and uncertainty, new forms of science communication and of risk assessment formed a) on a formalized academic level with scientific approaches for analysis and b) on an informal level of society and 'the public'. This process of enabling orientation through reflection of consequences[17] through the analysis and reflection of future technology by sketching scenarios[18] is at the center of the idea of TA. TA approaches are often considered

14 Ibid., "Science for the Post-Normal Age," in: *Futures* September (1993), pp. 741-42.

15 Allhoff, Fritz, et al.: "Ethics of Human Enhancement: 25 Questions & Answers," in: *Studies in Ethics, Law, and Technology* 4/1 (2010), pp. 13-19.

16 Nowotny, Helga/Scott, Peter/Gibbons, Michael: "Introduction: 'Mode 2' Revisited: The New Production of Knowledge: Minerva," in: *Minerva* 41/3 (2003), p. 179.

17 Grunwald, Armin: *Technikfolgenabschätzung: Eine Einführung*, Berlin: Edition Sigma 2010, p. 41.

18 Bierwisch, Antje/Kayser, Victoria/Shala, Erduana: "Emerging Technologies in Civil Security—A Scenario-based Analysis," in: *Technological Forecasting and Social*

as an interface between science, politics and society.[19] Gethmann describes, how difficulties with technologies are mainly based on different moral values and on different origins of the respective discourses and their modes of communication. Consequently, it is the task of TA not only to analyze the potentials of technologies, but also to examine moral values and ideologies of the affected parties.[20] In this normative environment, visions of science, as they are presented through science fiction, are a persistent trope within communication processes. Grunwald argues that by using the detours of public and political communication, scientific visions gain an enormous influence on research foundations, debates on risk and bioethics and finally on the persuasive power and the development of distinct research institutions.[21] Lösch states that such representations of (future) science work "as a means of communication between scientific, economic, and mass medial discourses which enable 'structural interfaces' between the different orders of discourse. [...] These visionary images map out 'future spaces' that are used to communicate about the present because these spaces enable interfaces between expectations of different discursive origin."[22] Hence, they are an important element in a social process of technology assessment and the framing of technology in the face of the public. Similarly, popular culture can be regarded as a translation device that accompanies communication processes between social systems on a narrative level through a critical-reflexive looking glass.

However, there are some premises we have to keep in mind when we consider popular culture artifacts as a kind of narrative technology assessment strategy:

- First, popular culture observes the development of distinct social and cultural agendas and finally consumes and reproduces them; popular culture is simultaneously reader and author of information.

Change, 101 (2015); Wright, David, et al.: "Ethical Dilemma Scenarios and Emerging Technologies," in: *Technological Forecasting and Social Change* 87 (2014).

19 Beecroft, Richard/Dusseldorp, Marc: "Technikfolgen abschätzen lehren—Bildungspotenziale transdisziplinärer Methoden. Zur Einführung," in: Marc Dusseldorp/Richard Beecroft (eds.), *Technikfolgen abschätzen lehren: Bildungspotenziale transdisziplinärer Methoden*, Wiesbaden: Springer VS 2012, pp 15-16.

20 Gethmann, Carl F.: "Rationale Technikfolgenbeurteilung," in: Armin Grunwald (ed.), *Rationale Technikfolgenbeurteilung: Konzeption und methodische Grundlagen*, Berlin, Heidelberg: Springer 1999, pp. 4-6.

21 A. Grunwald: *Technikfolgenabschätzung*, p. 105.

22 A. Lösch: "Anticipating the Futures of Nanotechnology," p. 394.

- Second, in its function as a producer of meaningful artifacts, popular cultural media can postulate and stabilize scientific facts, even if they are not necessarily real scientific facts. With recourse to Bruno Latour, a scientific concept achieves social recognition when it is plausible, that is, convincing. It does not necessarily matter that the concept is fictional.[23] Thus, they allow an epistemological re-interpretation, which may result in a critical reflection of the original context of meaning and information.[24]
- Third, media artifacts provide knowledge (or truth) on three levels: As moral, aesthetic or epistemological messages. But while aesthetics first aim is the experience of the medium, and ethics enforces a normative evaluation, science (or strategies of facticity) postulate an epistemic universality. In artifacts, these three levels are closely interconnected and influence each other and the perception of the medium through the consumer.[25]

In conclusion, media construct knowledge and media construct reality in the sense that they provide perspectives on how to perceive the world. By reducing complexity, they give us orientation. Also popular culture neutralizes ideological overlays of media artifacts and hence, opens them up to a broad public.[26] This process of appropriation is ubiquitous and has particularly to be taken into account for every social and cultural field that produces knowledge and meaning and also includes science as one of the probably most important fields of knowledge production.

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23 Kirby, David A.: "Science Consultants, Fictional Films, and Scientific Practice," in: *Social Studies of Science* 33/2 (2003), p. 238.

24 Huck, Christian/Zorn, Carsten: "Das Populäre der Gesellschaft. Zur Einleitung," in: Christian Huck/Christian Zorn (eds.), *Das Populäre der Gesellschaft: Systemtheorie und Populärkultur*, Wiesbaden: VS Verl. für Sozialwiss. 2007, pp. 22-37.

25 Macneill, Paul: "Ethics and the Arts: A Critical Review of the New Moralisms," in: Paul Macneill (ed.), *Ethics and the Arts*, Dordrecht, s.l.: Springer Netherland 2014; Miller, Richard W.: "Three Versions of Objectivity: Aesthetic, Moral, and Scientific," in: *Aesthetics and Ethics: Essays at the Intersection*, Jerrold Levinson (ed.), Cambridge Studies in Philosophy and the Arts, Cambridge: Cambridge Univ. Press 2006, pp. 167-78.

26 Jameson, Fredric: "Postmodernism and Consumer Society," in: Hal Foster (ed.), *The Anti-aesthetic: Essays on Postmodern Culture*, New York: Bay Press 1983, pp. 111-25.

Consequently, popular culture and science often interact and interfere with each other very closely. Technoscientific narratives in popular culture are therefore always representations of a historical referential reality. A brief look into the historical implementation of biotechnology as a narrative in literature and film would reveal an ever-changing discourse on human modification and human enhancement and its technoscientific possibilities on the one hand, and a contrasting phantasm of a conservative, static society on the other hand. Starting from literature like *Frankenstein* (1818) and the *Island of Dr. Moreau* (1896), via movies like THE FLY (1958) and SWAMP THING (1982) to movies like SPLICE (2009), they all represent scenarios in which science changes the human and the societal condition fundamentally. Science plays an ambivalent role in these movies, as it both promotes and destroys a utopian vision of a society.[27]

Of course, it is also important to note, that science is not represented in media artifacts for science's sake: it fulfills a narrative task, in which post-normal science becomes the battlefield of a mythological (anti-)hero.

"This mythology portrays science as a source of continued intellectual excitement and progressive discovery, focusing—as do the great majority of representations of science—on the outstanding individual scientist rather than the average laboratory worker. Our stereotypical scientific heroes, like military heroes, are permanently engaged on the 'front line' and at the cutting edge' to a degree that many actual scientists must find hyped-up and unconvincing."[28]

This narrative tradition of dramatization of science is also an important element in the use of technoscience in digital games.

STRUCTURAL PRECONDITIONS FOR SCIENCE IN DIGITAL GAMES

The structural narrative and aesthetical applicability of technoscience for games is based on three presuppositions, namely a) games can be understood as formalized conflicts, that b) can be experienced in otherwise impossible settings and which are c) centered on the interaction of the player with the game.

27 Parrinder, Patrick: *Utopian Literature and Science: From the Scientific Revolution to Brave New World and Beyond*, Houndmills, Basingstoke, Hampshire: Palgrave Macmillan 2015, p. 6.

28 Ibid., p. 7.

Games as Conflicts

Conflict is often considered to be a central condition for a narrative. Herman defines narrative as "sequences of states, events, and actions that involve an identifiable participant or set of participants equipped with certain beliefs about the world and seeking to accomplish goal-directed plans."[29] Conflicts occur when the participants cannot realize these plans because of opposing obstacles, i.e. in the form of other humans, nature, society, technology or psychological obstacles. Salen and Zimmerman indicate that conflict is predominantly a structural, even defining component of digital games. "All games embody a contest of powers. The contest can take many forms, from cooperation to competition, from solo conflict with a game system to multiplayer social conflict. Conflict is central to games."[30]

(Im-)Possible Worlds

If games are narratives and conflicts are central to the genesis narrative, it is important to bridge the gap between the player in his actual world and the text. This essential connectivity between narrative and individual player action is referred to with the term 'ergodic', indicating that a "nontrivial effort is required to allow the reader [or the player] to traverse the text."[31] One important element of meaningful interaction is to "combine and align the active controlled elements of the interactive media with emotional responses that are both built by an investment in play through action and give meaning and depth to it."[32] Besides conflict and interaction, Chris Crawford also includes 'representation' as a core characteristic of games. By representations he means "subsets of reality," repre-

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29 Herman, David: "Conflict," in: *Routledge Encyclopedia of Narrative Theory*, David Herman/Manfred Jahn/Marie-Laure Ryan (eds.), London: Routledge 2010, Kindle Pos. 4612.

30 Salen, Katie/Zimmerman, Eric: *Rules of Play: Game Design Fundamentals*, Cambridge, Mass.: MIT Press 2004, p. 80.

31 Aarseth, Espen J.: *Cybertext: Perspectives on Ergodic Literature*, Baltimore, Md.: Johns Hopkins University Press 1997, p. 1.

32 Apperley, Tom/Clemens, Justin: *The Biopolitics of Gaming. Avatar-player Self-reflexivity in Assassin's Creed II*, in: Matthew W. Kapell (ed.), *The Play Versus Story Divide in Game Studies: Critical Essays*, Jefferson, North Carolina: McFarland & Company, Inc. 2016, pp. 110-124, p. 118.

sentations of conflicts, which can be interacted with safely—with no danger of physical harm—by the player. [33]

In addition, games can be thought of as simulated conflicts within the formalized environment of a game. They fulfill this task by building an environment that uses representations of 'real life'. By doing so, they enable the player to experience conflicts, and to learn from them by failing, trying and experimenting with different strategies within the game. But in contrast to reality, they are never put into the risk of being physically harmed.

Often, the access to experimental simulations of conflict is made possible by utopian narratives. The utopian moment of the game can be explained out of the structure: each game provides the player with (functional) possibility spaces and even more so, (utopian) 'spaces of empowerment' in which virtual spaces enable the players to defy natural laws and cross socio-cultural and topographical boundaries by entering these non-places.[34] The enhancement of the physical abilities of the virtual body is a physical necessity, as it allows the player to interact meaningfully and interactively with the game world. This physical alteration spans from simple aspects like infinite stamina or strength to traverse giant game worlds (like in the FALLOUT games) to the metamorphosis of normal bodies into walking weapons (like in the BIOSHOCK games). Therefore, the medium actually becomes what McLuhan described as the extensions of man in the sense of a cognitive liberation from physical restraints.[35]

Furthermore, games not only offer a repertoire of possible actions and semantic interrelations within a game, they also offer impossible experiences within impossible spaces. "Impossible spaces are also representational spaces that can be found in digital games and that need not comply with the laws of the physical world. Dungeons, for example, can be located at sites where they simply could not exist if the normal rules of physics were followed."[36]

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33 Crawford, Chris: *The Art of Computer Game Design*, Berkeley: McGraw-Hill Osborne Media 1984 [2011), Kindle Pos. p. 364.

34 Görgen, Arno/Inderst, Rudolf T.: "Die Suggestive Kraft des Subjektiven. Utopien in Spielen—Spiele als Utopien," in: Karsten Weber/Hans Friesen/Thomas Zoglauer (eds.): *Philosophie und Phantastik. Über die Bedingungen, das Mögliche zu denken*, Münster: Mentis 2016: pp. 49-66, 53.

35 Hartmann, Frank: "Extensionen des Menschen—Prothesen des Geistes: Medientheoretische Annäherung an das Mängelwesen Mensch," in: *Merz* 3 (2003), pp. 163-68.

36 Walz, Steffen P.: *Toward a Ludic Architecture: The Space of Play and Games*, Pittsburgh, PA: ETC Press 2010, p. 154.

To make the impossible convincing, hence, to make the game world a possible world, "the realm of possibilities is recentered around her. For the duration of her immersion, she accepts the sphere created by the narrator as the actual world,"[37] meaning, that the "player willingly suspends disbelief and is ported to a world created in the virtual. Her cognitive system accepts the fact that there is a possible world where she is a ninja, a god, a railroad tycoon or a spaceship. And what is more, she accepts that she has only very limited control over this persona. She accepts certain key combinations to be actions like children accept buckets to be pies. She accepts changing pixels to be dungeons, monsters or whole armies just like a reader accepts sequences of words to be landscapes, grails, Sancho Panza... In this respect Aarseth speaks of functional 'autism'."[38]

A further mechanism is the use of an accessible, possible set of semantics, in which a logical compatibility exists between 'source world' (referential reality) and 'destination world' (referring, fictional world), which includes a shared minimal understanding of the properties, inventory, physical laws, etc (ibd.). Henry Jenkins expands this shared understanding of fictional and actual world by indicating that games often implement what he calls 'evocative spaces',[39] that is pictorial and narrative traditions from the 'actual' world, from actual discourses or fields of knowledge in order to increase player involvement and -immersion with the game.

A lot of games use either magic or science as a plausibility mechanism for the impossible game world. The difference is that magic defies all reason and accepts and implies a non-negotiable unknowable realm, while scientific reasoning indicates that all phenomena of a world are explicable in the end, even if the path to this knowledge might not yet be known.

Player-Centrism

Through interactivity and the implementation of a compatible semantics, games offer a strong player-game connection in which actual conflicts can be reenacted

37 Van Looy, Jan: "Virtual Recentering: Computer Games and Possible Worlds Theory," in: *Image & Narrative* (Online Magazine of the Visual Narrative) 12 (2005), accessed December 6, 2015, http://www.imageandnarrative.be/inarchive/tulseluper/vanlooy.htm

38 Ibid.

39 Jenkins, Henry: "Narrative Spaces," in: Friedrich v. Borries/Steffen P. Walz /Matthias Böttger (eds.), *Space Time Play: Computer Games, Architecture and Urbanism the Next Level*, Basel, Boston, Berlin: Birkhäuser 2007, p. 57.

and experienced without the danger of being physically harmed. Markus Rautzenberg explains that games "allow an actual integration of the perspective of the participant into the perspective of the observer and because of this, both an internal and external perspective of the interacting subject. This subject therefore is at the same time distant observer and involved actor."[40]

Therefore, games encourage critical reflections on social and cultural problems. They are, in a sense, philosophical thought experiments. As Marcus Schultzke has pointed out:

"even if video games are not thought experiments in a strict sense, they can function heuristically as thought experiments when they are interpreted as modeling philosophical problems [...]; they allow the experiments to actually be performed by situating them within simulated worlds that are far more complex and detailed than the settings described in most narrative thought experiments."[41]

All these considerations I offer here are focused on games in which the point of action is an avatar or enacted through a first-person perspective. Hence, the avatar is not only the primary agent of interface between player and game, it also builds a semantical bridge between player and game, as the avatar and his properties are built upon the premises of the game world. In a virtual form of biopolitical assignment of player and avatar, it is the task of the player to develop his character within the expectations of the game to uphold a meaningful interaction with the game world.[42]

Representations of Life Sciences and/or Bioethics apply to the idea of games as player-centric, artificial, impossible and formalized conflicts on three semantic interfaces. First on the level of the gameplay, a personified Point of Action, be it as a first or third person perspective, creates semantic interfaces in relation

40 Rautzenberg, Markus: "Navigating Uncertainty: Ludic Epistemology in an Age of New Essentialisms," in: Mathias Fuchs (ed.), *Diversity of Play: [based on keynote lectures held at DiGRA 2015 in Lüneburg]*, Lüneburg: meson press Hybrid Publishing Lab 2015, p. 103.

41 Schulzke, Marcus: "Simulating Philosophy: Interpreting Video Games as Executable Thought Experiments," in: *Philosophy & Technology* 27/2 (2014), p. 252.

42 Apperley, Tom/Clemens, Justin: "The Biopolitics of Gaming: Avatar-Player Self-Reflexivity in Assassin's Creed II," in: Matthew W. Kapell (ed.), *The Play versus Story Divide in Game Studies: Critical Essays*, Jefferson, North Carolina: McFarland & Company, Inc. 2016, pp. 110-124.

to questions of the body. Biomedical discourse allows insights in the development of the player character, his health status, and other biometrical aspects. The body can also work as a narrative tool, because it gets its own history (like the successive altering of the bodies of the protagonists in the BIOSHOCK-series), and as an extension of the player to interact with the world, it becomes a tool to act sensorily in the game world, which in questions of autonomy or heteronomy might be a central characteristic. Secondly, biomedical science can work as a means to explain modes of interaction with the game world. Games use scientific language and scientific imagery to explain impossible phenomena of the world. Biomedical technoscience is a way to logically communicate, for example, why and how you use functional structures, artifacts and technologies, and what (fictional) history relates to them. It therefore is part of the 'ludonarrative archaeology' of the game. In many games, the player is confronted with virtual artifacts that refer to the game world and its historical evolution. In this context, archaeology, as the science of human activity in the past, recovers and examines the extant material culture of past societies, which includes artifacts, architecture, biofacts and cultural landscapes. In essence, the player has to achieve this knowledge autonomously by interacting with the artifacts of her game world. These artifacts constitute an overarching narrative that helps the player to understand the game world.[43]

In the case of DEUS EX: HUMAN REVOLUTION,[44] this connection of technoscience, augmentations and keeping the game world playable works out, because the augmentations are explained thoroughly through texts, conversations, etc. Like in BIOSHOCK,[45] the interpretation of this textual white noise becomes part of the task to find the right augmentations at the right time, in order to proceed with the text of the game. Third, if games are formalized conflicts, thought experiments about different philosophical or practical problems, then it is logical that games choose real world fields or problems as a primary narrative source. While many games feature narratives about political or social conflicts, bioethics also seems to be a valuable source for creating deep ludic experiences. Its advantage not only lies in the fact that bioethics is concerned with humans and their mental and physical integrity in the face of research and clinical practice. Its focus on

43 Görgen, Arno/Inderst, Rudolf T.: "Utopia, Ludonarrative Archaeology and Cultural Knowledge," paper presented at DIGRA: Diversity of Play, Lüneburg, May 14-17, 2015.

44 DEUS EX: HUMAN REVOLUTION (Square Enix 2011, ●: Eidos Montreal)

45 BIOSHOCK. (2K Games 2007, ●: 2K Boston)

questions of the body offer a perfect blueprint for conflicts of the player/ avatar or other characters in the game world. Its further applicability for games is based on a massive and widely known corpus of epistemological and ontological knowledge, which can easily be integrated into aesthetical and narrative formations of game worlds. Taking again DEUS EX: HUMAN REVOLUTION as an example, the game tackles a wide bioethical debate on enhancement and manages to transfer its pros and contras into the structure of the game, into gameplay and the game world. As in many other bioethical debates, the question in DEUS EX also circulates around questions of autonomy, particularly, whether human enhancement can be applied in a fair and just manner.

BIOFACTS IN GAMES

Biomedical technoscience is used as a plausible formula for phenomena of game worlds that otherwise would have to be explained by magic. In particular, a huge amount of science fiction themed games offers characters and living beings which are the product of biotechnology. In the following, I will examine the biotechnological genesis and sociocultural and moral condition of such 'biofacts' in games. The term "Biofact" was introduced by Nicole Karafyllis (Karafyllis 2003) and combines the Greek word Bios (life) and artifact (manmade), and refers to biotic, living artifacts. Classical artifacts are manmade dead objects that cannot be found in nature. While artifacts are products of technology, living beings belong to the realm of nature. Biofacts create an ontological in-between, as they are living things made by men in terms of a wished benefit or an outcome. The idea of the biofact emphasizes the fact, that also living things can be artificial or have a technological origin. Furthermore, the term "biofact" does not refer so much to properties of an entity, but to origins and histories of beings. These histories are histories of becoming, of the hybrid character of biofacts between being part of nature and the artificial modeling of the biofacts.[46] The conceptualization of biofacts enables a critical perspective of research in technoscience, of its blurred moral boundaries and the above stated general demand for feasibility and applicability of science for technology and the technologization of our living environment and ourselves as humans. Biofacts are an important element in many games. Most of these games deal with science fiction scenarios

46 Karafyllis, Nicole C.: "Biofakte—Grundlagen, Probleme, Perspektiven," in: *Erwägen Wissen Ethik* 17/4 (2006), p. 548.

and with human experiments, in which human beings evolving to a post-human status often is the primary quest of the science in the given game world. The results of such efforts are often anthropogenic catastrophes. Biofacts are a phenomenon of science fiction themed games, which offers a complex range of meditations of its sociocultural, economic or political status in games. To enable at least a short glimpse i this complexity, the analysis will be performed by focusing on the perspective of a) the player/character, b) the perspective of the biofact itself, and c) the fictional creator of the artifact by using the example of BIOSHOCK and BIOSHOCK 2.[47]

All three games of the BIOSHOCK series are set in an alternative timeline in secret, hidden cities. While BIOSHOCK and BIOSHOCK 2 take place between the years 1960 and 1968 in Rapture, an underwater city in the middle of the Atlantic, Columbia, BIOSHOCK INFINITE'S[48] setting, is a giant flying city, which the player/character visits in 1912. Each part of the franchise deals with the consequences of a distinct form of fundamentalism. While BIOSHOCK drafts a scenario, in which a radicalized market liberalism and egoism—basically a realization of Ayn Rand's (1905-1982) philosophy of Objectivism—leads the city and its population into a genetic catastrophe, the basic ideological idea of BIOSHOCK 2 is a radical socialist and quasi-religious altruism, with the collective effort and the power of the community in its center. Finally, BIOSHOCK INFINITE plays with the idea of a racist Christian American Exceptionalism. In all three games, science at the same time enables the respective utopia, and causes or supports its demise. As BIOSHOCK and BIOSHOCK 2 give particular emphasize to the role of genetic engineering, I will exclude BIOSHOCK INFINITE from my forthcoming analysis. The ambivalent role of science crystallizes itself in the biofacts of the franchise, the post-human citizens and characters that populate Rapture.

The Player as a Biofact

The premise of BIOSHOCK is that the player, who stranded as a result of an airplane crash in the underwater city of Rapture, has to fight his way through a dystopian enhancement society in order to find a way back to the surface. The post-human society of rapture was made possible by the commercial exploitation of ADAM. ADAM is an organism farmed from a sea slug. Like a virus, it enters

47 BIOSHOCK 2 (2K Games 2010, ●: 2K Games, Arkane Studios)

48 BIOSHOCK INFINITE (2K Games 2013, ●: Irrational Games, 2K Australia, Blind Squirrel)

the body's cells and alters its genetic structures. These alterations enable various genetic modifications, which are necessary if the player wants to successfully play the game, i.e. after using ADAM, the player/character can shoot electricity/fire/ice from his arms as weapons and/or tools. Thus, BIOSHOCK cites techniques of Genome Editing and Genetic Engineering, in particular the biotechnology of Recombinant DNA,[49] through which alterations of genetic material also are performed via the infiltration of a virus.

In the first part of BIOSHOCK, loss of autonomy is the central theme of the game—countered by the city's ideological credo of total individual freedom and egoism. In the first part of the game, the player/character slowly pieces together that he is a created being, whose memories and identity are artificial. Furthermore, by using ADAM he also is increasingly becoming one of the creatures he actually fights. In essence, the game is about not having a choice, no matter whether the player/character wants to spare the life of his father (and is not allowed to) or if he wants to farm (or not) the Little Sisters, who provide him with ADAM. A claimed ludonarrative dissonance does not take place, because within the game mechanics he is forced to decide, without any effective relevance for the development of the story. Particularly with the performance of a forced patricide, BIOSHOCK manages to implement mechanics and storytelling: the player is forced to apply a game-exterior reflection when he is confronted with his total loss of autonomy and the realization that he has been manipulated by the game from the very start. In this central twist, the sentence 'A man chooses, a slave obeys' becomes a cynical commentary on the player's heteronomy. It is this relationship between the narrative and the game mechanics, in which the player is thrown back on his heteronomous inability to exercise influence on the game. In BIOSHOCK 2, this process is reversed. The main goal here is the liberation of a Big Daddy called Subject Delta. The player/character, Subject Delta, frees itself from its own immaturity and seeks a way out of heteronomy.

Hence, BIOSHOCK intends to evoke ethical reflection by playing with ideas of autonomy and heteronomy not only of the player, but also of the characters in the game world. BIOSHOCK structurally picks up an understanding of autonomy, which resembles directly bioethical concepts and understandings of autonomy. Autonomy is an ethical key category in Beauchamp and Childress' *Principles of*

49 The first successful artificial alterations in the genome have been described in R. Wu and E. Taylor: "Nucleotide Sequence Analysis of DNA. II. Complete Nucleotide Sequence of the Cohesive Ends of Bacteriophage Lambda DNA," in: *Journal of Molecular Biology* 57/3 (1971).

Bioethics, which since the 1970s has become a paradigmatic theory within medical ethics.[50] This approach describes a situational autonomy, according to which patients have a right to give a consent to a medical treatment after they have been provided with sufficient information concerning their treatment. In other words, treatment decisions must be made deliberately, with an understanding of the consequences and free from external pressure from external forces. It is a procedural conception of autonomy, which is characterized by subjective and critical reflexivity.[51] However, games mainly use conceptions of heteronomy, lack of autonomy, to induce ethical reflection, no matter whether this is taking place on a ludic or narrative level.

Although this subject of autonomy, or better, losing one's autonomy, through a perverted unethical science is very convincing, its application is not without its problems. In BIOSHOCK, Biofacticity merely functions as a McGuffin, "virtual objects with the sole purpose of being semiotic 'blank spaces' in a pan-semiotic world where normally everything is semantically connected to 'make sense' for the player,"[52] hence, as a device, that allows the narrative to happen, without having a deeper meaning itself. In an inherently peaceful society it doesn't make sense to develop weapon-enhancements, as they are used in BIOSHOCK, as there seems to be no realistic/practical use for most of them beyond gameplay. Thus, they simply exist to allow the game to happen. This discrepancy between gameplay necessity and ethical relevance cannot be completely resolved and also seems to define the condition of the non-playable biofacts.

The Biofacts Themselves

The quantitatively biggest group of biofacts can be found amongst the non-playable characters (NPCs), although for the purpose of this analysis, they will be divided into main non-playable characters, which are central for the development of the story and who will be dealt with in the following subchapter, and side NPCs which mainly have the task to fill the game world with some virtual life. NPCs are purely functional. This means, they have a specific value or func-

50 Beauchamp, Tom L./Childress, James F.: *Principles of Biomedical Ethic*, Oxford: Oxford Univ. Press 2009.

51 Tamborrino, Lisa: "Patientenautonomie," in: *Deutsches Referenzzentrum für Ethik in den Biowissenschaften*, accessed December 6, 2015, http://www.drze.de/im-blick punkt/patientenverfuegungen/autorennachweis.

52 M. Rautzenberg: "Navigating Uncertainty," p. 101.

tion for the player[53] which can range from producing and providing useful objects or services, guarding places or the player/character, supplying the player with information to just being somewhere in order to make a place look busy[54] or to provide "cannon fodder" for the player. Warpefeldt and Verhagen explain further, that "NPCs play a critical role in upholding the believability of a game world, both by their behavior but also by their appearance. By making the game believable, they also strengthen the player's feeling of immersion. However, the visual representation of NPCs is not only defined by the functions they provide within the game, but also encompasses and makes perceptible the roles they play in the narrative of the game. Therefore, the visual representation of an NPC must not only signal its functional role, but also be in line with the expectations set by the narrative."[55]

In BIOSHOCK and BIOSHOCK 2, the biggest number of side NPCs consists of so-called Splicers, deformed and aggressive humans, who have fallen into madness due to their ADAM-consume. These Splicers, the former citizens of Rapture, are the primary victims of a commercialized genetic engineering technology. Because of the unintended effects of ADAM (better healing properties) curative medicine was considered increasingly obsolete. At the same time, the side effects of aesthetic surgery were perceived as less severe. This led to a shift in focus of Rapture's medicine to cosmetic aspects of medicine. This initiated a downward spiral, a kind of infinite regress of technology impact containment, in which the negative consequences of the genetic and physical enhancements have been countered by increasingly drastic corrective measures of plastic surgery, which in turn required medical treatment itself. Aesthetically, the distorted bodies and faces of the Splicers resemble very much Henry Tonks' First World War medical photographs of soldiers with facial injuries. Suzannah Biernoff considers the use of these photographs as unethical as they—in her opinion—disrespect the individual suffering of the depicted men.[56] This assessment of the use of the photographs exemplifies the ambivalent role of the Splicers. On the one hand,

53 Johansson, Magnus: "Do Non-player Characters Dream of Electric Sheep? A Thesis about Players, NPCs, Immersion and Believability," Department of Computer and System Sciences, Stockholms universitet, 2013, p. 58.

54 Bartle, Richard A.: *Designing Virtual Worlds*, Berkeley, CA: New Riders 2003, p. 87.

55 Proceedings of the 8th International Conference on Game and Entertainment Technologies (2015), pp. 1-2.

56 Biernoff, Suzannah: "Medical Archives and Digital Culture," in: *Photographies* 5/2 (2012), p. 198.

they are given a backstory of their partly forced, partly chosen transformation. They are hence not only simple monsters, they are victims of a failed policy and unregulated biomedical research. Aesthetically, they are connected through their visual resemblance with the victims of another, actual anthropogenic catastrophe, the First World War. On the other hand, though they have a history, which is a history of being forced to change their bodies and to give up their identities, they appear shallow and functional in the sense that even if they are a lost and damned generation of Rapture citizens, they are nevertheless reduced to their function as post-human obstacles for the player/character. This impression also emanates from the fact that due to technical reasons, they all share just a few skins, appearances and faces, they become replaceable. In this, they share the fate of most other biofacts and NPCs generally in games (Supermutants in FALLOUT, Leapers in REMEMBER ME, Necromorphs in DEAD SPACE).[57]

The Creator of Biofacts

As for the biofacts as side NPCs or biofacts as player/character, the same accounts for their creators. The term 'creator' not only includes the technoscientific actors, who develop the biotechnology which is necessary to transform the human into a post-human being. 'Creator' also includes the spearheads of the economic infrastructure, which invests money and a possibility space for the creation of the biofacts. Hence, in BIOSHOCK, we not only find classical 'mad scientists' like Dr. Steinman, the head of the department of aesthetical surgery, Dr. Brigid Tenenbaum, geneticist and developer of ADAM, or Sophia Lamb, clinical psychiatrist and a religious-scientific fundamentalist. They all not only are representations of a fear of an anonymous space of scientific knowledge without personal responsibility, in which the scientists find a social vacuum that allows the transformation of a healthy society into the victims and new representatives of an amoral anarchic dystopia.[58] As Keller points out, the character of the mad scientist in popular culture not only is a self-destructive unethical being. He is almost always a very brilliant, imaginative scientist whose inventions al-

57 See also Dovey, Jon/Kennedy, Helen W.: *Game Cultures: Computer Games as New Media, Issues in Cultural and Media Studies*, reprinted, Maidenhead: Open Univ. Press 2011, p. 55.

58 Keller, Felix: "Der Sinn des Wahns: der Mad Scientist und die unmögliche Wissenschaft," in: Torsten Junge (ed.), *Wahnsinnig genial: Der Mad Scientist Reader*, Aschaffenburg: Alibri 2004, p. 83.

ways include something fascinating. He is a relic of a personalized science, which postulated the genius on one and the mad unethical scientist on the other extreme, while at the same time both, as projections of socioculture, are driven by the modern hopes of enlightenment for a scientific salvation.[59] In the process of a professionalization and institutionalization of science, the influence of the genius is increasingly diminished. While the genius dissolved in the self-monitored superstructure of scientific institutions, the mad scientist chose a path of autonomy and subjective knowledge, which also included a sequestered egocentric ethics.[60] Hence, science in BIOSHOCK is not unethical, but the ethical standards technoscience obeys to are born out of an isolated, unregulated environment, which purports the aim of a general welfare but in the end circulates around the personal success of the scientists.

These scientists all get support by the founder of Rapture, Andrew Ryan, and his criminal antagonist and owner of the biotech company Fontaine Futuristics, Frank Fontaine. Both therefore might be called 'mad entrepreneurs', although they both are not 'mad' in a classical sense, but they think in pure economical terms (which in Andrew Ryan's case also is structured by his objectivist ideology).

The history of the introduction of ADAM in the markets shows the drug is developed in the context of unregulated biomedical research and introduced to the public despite severe side effects that became obvious early in the development process. As Andrew Ryan explains in an audio file:

"There has been tremendous pressure to regulate this Plasmid business. There have been side effects: blindness, insanity, death. But what use is our ideology if it is not tested? The market does not respond like an infant, shrieking at the first sign of displeasure. The market is patient, and we must be too."[61]

Ryan doesn't seem to feel bound by morality, e.g. the bioethical principle of nonmaleficence.[62] Instead he relies on the self-regulatory powers of the market.

59 Ibid., p. 85.

60 Ibid., pp. 82-83.

61 The BioShock Wiki: "Andrew Ryan—The Market is Patient," accessed November 3, 2011, http://bioshock.wikia.com/wiki/The_Market_is_Patient

62 T. Beauchamp/J. Childress: *Principles of Biomedical Ethics*, pp. 120-93.

Moral considerations of research with human subjects, i.e. as stated in the Nuremberg Codex,[63] do not count at all.

What unites these 'creators' in terms of autonomy is the realization of absolute self-centered autonomy through an ignorance of the autonomy of their respective social environment. The vulnerability of individual autonomy constitutes the great metanarrative in Bioshock. The text of the game thus seamlessly fits into the tradition science dystopian literature.

CONCLUSION

Science as a vital generator and provider of knowledge is an important part of society which sometimes lacks an effective translation of information to the society it is supposed to promote. In case of emerging, new technologies like genetic engineering, this vacuum gets filled by other socio-cultural forms of interpretations of science in which popular culture provides a narrative form of science and technology assessment.

The example of BIOSHOCK shows that scientific research with its primate on technological applicability is seen critically as a threat to the human condition, respectively the integrity of the human body and soul. All examples in BIOSHOCK have in common that the biofacts are former humans who were deprived of their memories and their identity, as well as the possibility to make their own decisions. At the same time the transformation always pursued a purpose, whether an increase of economic or political power, or the achievement of a post-human society model. In this context, autonomy as the central principle of bioethics (or of a general applied ethics) is to be regarded as the element that determines the actions of characters and NPCs in games. This means that all representations of biofacts in games lead to a central conflict between productivity and applicability on the one hand, and the protection of autonomy and certain fundamental rights of humanoid biofacts on the other hand.

Unfortunately, this basic conflict is mirrored on the meta-level of the game. Although ethical conflicts are created with the goal of entertainment, these media adaptations lead to a structural appropriation of the conflict throughout the game. That said, the core of the ethical problem is unwittingly reduced to a mere

63 The Norwegian National Research Ethics Committees 2015: "The Nuremberg Code," accessed April 19, 2017; https://www.etikkom.no/en/library/practical-information/legal-statutes-and-guidelines/the-nuremberg-code/

obstacle or an aesthetic decoration of the game. The conflict between the implementation of ethically critical reflexive content and its semantical evacuation through aesthetization is a central problem which can be observed in many games, i.e. in DEUS EX: HUMAN REVOLUTION, the FALLOUT franchise or WOLFENSTEIN: THE NEW ORDER. Through the biohorror of such games (which sometimes takes on the form of a game immanent, biopolitics (Foucault), references to real reality can be drawn and awareness through the dissonant pictures and worlds of knowledge can be developed. Nevertheless, games can contribute to an individual narrative TA, because they can put relate normative, aesthetic and scientific aspects with one another. Hence, the aesthetical and narrative filters of these games enable new perspectives of the sociocultural perception of biomedicine and its normative containments.

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LUDOGRAPHY

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BIOSHOCK 2 (2K Games 2010, O: 2K Games, Arkane Studios)

BIOSHOCK INFINITE (2K Games 2013, O: Irrational Games, 2K Australia, Blind Squirrel)

DEUS EX: HUMAN REVOLUTION (Square Enix 2011, O: Eidos Montreal)

Pokémon Go

User-Created Social Environments in a Single Player Game

Christian Toth

Pokémon Go[1] is a free online augmented reality game. The player basically walks around in the real world observing his or her phone, hoping to bump into a Pokémon and then catch it. You may even battle against other players' Pokémon in arenas, or team up with players from your own team, though not in real time. This game became so viral that, for a time, cities seemed to have Pokémon trainers walking around everywhere. While obvious bodily risks, such as accidents due to distraction, and health benefits, such as increased time spent outside, are heatedly discussed in social and conventional media, this paper aims to address aspects of reality perception as well as how social environments are created by players and can be put to use in contexts of social organizations and education. Pokémon Go offers an innovative experience that temporarily allows augmented and non-augmented realities to merge. This merging is not a game mechanic, but a productive achievement of the player through identification and social engagement with and outside the game. The game itself merely offers motivation to start these individual processes, which have implications for pedagogical and educational work as seen in edutainment.

1 Pokémon Go (Niantic 2016, ●: Niantic)

WHY THE HYPE?

The release of Niantic's POKÉMON GO on a world-wide scale reached unexpected attention amongst both gamers and media. The application has been specifically designed for smartphones and was released on iOS and Android devices, first in the USA on July 6th 2016 and then in Germany one week later with other European countries following shortly after and finally in Japan on July 22nd.[2] Despite many technical issues, this free mobile game rapidly found its way into many smartphones all over the world, even before its official release. The game's principle is simple. By choosing an avatar and a starter Pokémon, the player basically walks around in the real world observing his or her phone, hoping to bump into a Pokémon and then catch it. Of course, the game mechanics allow you to search for them, making it an interesting task. You may even battle against other players' Pokémon in arenas, or team up with players from your own team, though not in real time. This game became so viral that, for a time, cities seemed to have Pokémon trainers walking around everywhere. On the other hand, the game was severely flawed upon its initial release (e.g. the fake tracking system that was later removed and substantial server problems). By February 2017, most of these issues had been solved and new content had been introduced (e.g. more Pokémon and special events). Even though POKÉMON GO is hardly covered in the news anymore, there is still a solid player base that regularly plays the game and a lot of research is being conducted. One might ask, why there was such a hype about POKÉMON GO and why so many people have played the game despite its obvious issues. For one, POKÉMON GO is somewhat of a dream come true, especially to the generation that was born in the late 1980s and later (the first POKÉMON[3] Edition was released in February 1996 on the Gameboy Color). As children, many have fantasized about being a POKÉMON Trainer, wandering the world in search of new Pokémon and competing with other Trainers. This is thanks to Satoshi Tajiri, who designed the first POKÉMON games as a play world for children growing up in industrialized cities, and in remembrance of his own childhood, which he spent collecting insects and cray-

2 Tateno, Masaru/Skokauskas, Norbert/Kato, A. Takahiro, et al.: "New Game Software (Pokémon Go) May Help Youth with Severe Social Withdrawal, Hikikomori," in: *Psychiatry Research* 246 (2016), pp. 848-849.

3 POKÉMON RED AND BLUE/POCKET MONSTERS: RED AND GREEN (Nintendo 1996, ●: Game Freak)

fish.[4] Thanks to the Gameboy's linking mechanic, people had to meet up and link their Gameboys via a short cable to fight each other or trade Pokémon. The Gameboy was a handheld console, making POKÉMON a game that one could play on the go. From this perspective, POKÉMON has been a mobile game from the very beginning. POKÉMON GO, released about 20 years after the first generation of Pokémon were introduced, has not introduced anything novel, but rather picked up the original concept of Pokémon by making use of the tracking system and camera of smartphones, which most children possess or at least have access to nowadays. For the original generation, POKÉMON GO might actually remind them of *the good old days* while fulfilling their childhood dream of becoming a Trainer themselves. However, this paper argues that by introducing augmentation techniques, POKÉMON GO feels like a reinvention of the brand and gives access to augmented realities in a very intriguing and fun way, lowering concerns about new technologies and therefore making it especially accessible.

AUGMENTED REALITY IN POKÉMON GO

POKÉMON GO can be described as an augmented reality (AR) game. While games based in virtual reality (VR) set the player in a fully virtualized digital reality with VR headsets that allow for a full 360°experience and therefore complete audiovisual immersion, augmented reality makes use of 2D or 3D visualization of the actual reality in which the player's body is situated. Basically, AR generates virtual objects and implements them in a real environment, which can only be seen through a technological device.[5] There are different definitions and classifications for augmented reality.[6] Azuma[7] defined three key characteristics

4 Allison, Anne: "Portable Monsters and Commodity Cuteness: Pokémon as Japan's New Global Power," in: *Ostcolonial Studies*, 2003, pp. 381-395.

5 Redondo, Ernest/Puig, Janina/Fonseca, David/Villagrasa, Sergi/Navarro, Isidro: "Augmented and Geo-Located Information in an Architectural Education Framework. 6th International Conference, VAMR 2014, Held as Part of HCI International 2014, Heraklion, Crete, Greece, Proceedings, Part II," in: *Randall* Shumaker /Stephanie Lackey: *Virtual, Augmented and Mixed Reality*, Cham: Springer International Publishing 2014, pp. 15-26.

6 Milgram, Paul/Kishino, Fumio: "A Taxonomy of Mixed Reality Visual Displays" in: *IEICE Transactions on Information Systems*, 12 (1994), pp. 1-15.

of AR that are often cited: 1. the combination of real and virtual objects in a real environment, 2. interactivity and running in real time, 3. aligning real and virtual objects with each other.

The device that generates the augmented content in POKÉMON GO is the smartphone. It captures the environment of the player through its camera and generates a Pokémon on the screen, making it seem like the Pokémon is actually in the real environment and cannot be seen with the naked eye, but rather only through the device. Adding to this experience is the Pokémon's own movement, that is centered around the player, which makes the player turn left and right in order for them to successfully capture the POKÉMON. Following Azuma's criteria, the real objects are the environment that is captured by the camera, whereas the virtual objects that are being generated by POKÉMON GO are the Pokémon. Interactivity is based on the fact that players have to move through space in order for Pokémon to appear, to find Poké-Stops (where they can collect items to improve their performance) or challenge other players in arenas. Catching POKÉMON requires the player to aim by swiping his finger on the screen in order to throw a Poké-Ball at the Pokémon, as well as capturing the Pokémon by aiming the camera and following the Pokémon's movement if required. This means that the application must run in real-time. Interestingly, even though the game is primarily a single player game, it generates interactivity in a social environment as well. In the very beginning of his career as a Pokémon trainer, the player has to choose between one of three teams: blue, red or yellow. These teams compete against each other to dominate the Poké-World by challenging each other for control over Arenas (thus far the only way for players to meet one another within the game world). It is worth mentioning that players do not fight each other directly, but rather place their Pokémon in an arena, in which players from rival teams may challenge AI-controlled versions of player Pokémon left in the arena. In terms of game mechanics, it is difficult to argue that POKÉMON GO creates a digital social environment. Still, there is a very dominant social aspect about POKÉMON GO that is not created primarily by the game, but by the players themselves in the way they play and perceive the game. As for the third of Azuma's criteria: the alignment or mixture of real and augmented objects occurs on the player's screen.

7 Azuma/T, Ronald/Baillot, Yohan/Behringer, Reinhold/Feiner, Steven/Julier, Simon/MacIntyre, Blair: "Recent Advances in Augmented Reality," in: *IEEE Computer Graphics and Applications* 21/6 (2001), pp. 34-47.

ANTHROPOLOGICAL IMPLICATIONS OF BEING A POKÉMON TRAINER

The entanglement of virtual and material reality in augmented reality is noteworthy from an anthropological standpoint, because it reveals information about how humans perceive themselves in space, both physically and existentially. Furthermore, by understanding how humans move and orientate themselves in augmented environments, we might deduct important findings in terms of media education. Some games like the current DEUS EX[8] series give a futuristic glimpse at how augmentations may shape the future of mankind. However, there is already a lot going on in both research and development. While VR can be connected to forms of escapism amongst other motivational factors that have been related to ordinary virtual worlds,[9] AR does the exact opposite: it enables the user to widen their abilities and senses and is not limited to the field of engineering and information technology any more.[10] It also helps users to overcome obstacles by enhancing user.[11] With AR finding its way into the lives of ordinary people and most people possessing devices that are capable of generating and displaying AR content, POKÉMON GO is an application that has taken the very popular Pokémon brand and made use of current technology while introducing AR as something fun and easy to understand. In POKÉMON GO, the player experiences the widening of visual senses through their smartphone and learns to

8 DEUS EX (Eidos Interactive 2000, O: Ion Storm)

9 Hassouneh, Diana/Brengman, Malaika: "A Motivation-based Typology of Social Virtual World Users," in: *Computers in Human Behavior* 33 (2014), pp. 330-338; Jung, Yoonhyuk/Kang, Hyunmee: "User Goals in Social Virtual Worlds: A Means-end Chain Approach," in: *Computers in Human Behavior* (2010), pp. 218-225; Shelton, Ashleigh K.: "Defining the Lines Between Virtual and Real World Purchases: Second Life Sells, but Who's Buying?," in: *Computers in Human Behavior* 26 (2010), pp. 1223-1227.

10 Olalde, Karle/Guesalaga, Imanol: "The New Dimension in a Calendar: The Use of Different Senses and Augmented Reality Apps. International Conference on Virtual and Augmented Reality in Education," in: *Procedia Computer Science* 25 (2013), pp. 332-329.

11 Rashid, Zulqarnain/ Melià-Segui, Joan/Pous, Rafael/Peig, Enric: "Using Augmented Reality and Internet of Things to Improve Accessibility of People with Motor Disabilities in the Context of Smart Cities (In Press)," in: *Future Generation Computer Systems*, Dec 8, 2016.

interact with augmented objects playfully. From an anthropological perspective, it will be interesting to find out more about how humans perceive augmented objects and whether their perception has any effect on how they interact with their environment. Studies show that AR is useful in educational contexts such as museums[12] and institutions of higher education.[13] AR may also bring about a shift from instructor-based systems to more autonomous learning methods.[14] Even though most research has been conducted in the academic fields of medicine and engineering, AR is a promising new technology for pedagogical contexts in general. In POKÉMON GO, players are forced to walk around in order to play the game. Primarily, they are on the look-out for augmented content, but at the same time, they are moving through a real environment, and through GPS tracking, players are made aware of where they are. Additionally, the game's architecture makes the player not just wander around aimlessly, but rather motivates him to move from one point of interest to another, showing him photos and possibly further information of what he is seeing. Through these augmentations, the player looks at the environment more closely and learns about landmarks that may have otherwise been ignored. This confirms the research of Seifert, who has identified digital games in general as spaces of lifelong or informal learning.[15] Even though POKÉMON GO is *only* a game that primarily aims to entertain the consumer, the very same consumer experiences the game as an enhancement of his senses.

12 Cianciamlo, Dario: "From Local Traditions to 'Augmented Reality'. The MUVIG Museum of Viggiano (Italy)," in: *Procedia—Social and Behavioral Sciences* 188 (2015), pp. 138-143.

13 Sommerauer, Peter/Müller, Oliver: "Augmented Reality in Informal Learning Environments: A Field Experiment in a Mathematics Exhibition," in: *Computers & Education* 79 (2014), pp. 59-68.

14 Jamali, Siti Salmi/Shiratuddin, Mohd Fairuz/Wong, Kok Wai/Oskam, Charlotte L.: "Utilising Mobile-Augmented Reality for Learning Human Anatomy," in: *Procedia—Social and Behavioral Sciences 197. 7th World Conference on Educational Sciences (WCES-2015)*, pp. 659-668.

15 Seiffert, Robert: "Games als Sozialisationsfaktor," in: Christian Swertz/Michael Wagner (eds.), *Game\\Play\\Society--Contributions to Contemporary Computer Game Studies*, Munich: Kopaed 2010, pp. 253-264.

POKEMON GO AS SOCIAL ENVIROMENT

Taking a social perspective on the game, it is noteworthy that POKÉMON GO was especially successful because it made players, even total strangers, connect with ease. The predominantly social construction of players becoming Pokémon trainers and developing a new identity is both individual and collective. Individuality is created by customizing your own avatar, choosing what Pokémon to keep, train and develop, and of course choosing your path through reality (for example where you go to search for Pokémon). You may get a reputation amongst other Pokémon trainers for obtaining and defending an arena, and you can work with up to nine other trainers of your own team when doing so. There are hardly any arenas left uncontested, even in more remote places. Collective identity comes from identifying yourself as a Pokémon trainer. It is quite easy to spot other trainers due to their behavior and, especially during the first few months after the game's release, it was witnessed all over the world that trainers gathered despite being total strangers to talk about the game and hunt for POKÉMON together. Furthermore, they communicated with one another as POKÉMON trainers, bringing a social element into the game that exceeds common multiplayer games, making POKÉMON GO somewhat of an Augmented Live Action Role-Playing Game, even though the role-playing part comes from intrinsic motivation, not because the game demands it. Players are motivated to collect and train all Pokémon and therefore must leave their homes and comfort zones, and physically move through space. The app registers when a player is moving too fast (e.g. when driving in a car or sitting in a train) and only lets Pokémon appear when the player is moving at a walking pace. Naturally, this leads to passive health benefits through increased physical activity, especially since POKÉMON GO is not labeled as a health app. However, I disagree with LeBlanc & Chaput, who have stated: "POKÉMON GO uses gamification to get participants to increase their walking, both through increased chances to catch Pokémon characters."[16] Gamification employs game mechanics in out-of-game-contexts as extrinsic motivation to achieve a certain goal, as demonstrated by leaderboards.[17] POKÉMON GO does not want people to live healthier lives; additional exercise is simp-

16 LeBlanc, Allana G./Chaput, Jean-Philippe: "Pokémon Go: A Game Changer for the Physical Inactivity Crisis? (In Press)," in: *Preventive Medicine*, (2016).

17 Pfeiffer, Alexander/Wernbacher, Thomas: "Narration, Interaktion und Kooperation im Computerspiel. Die gamifizierte Gesellschaft," in: Winfred Kaminski/Martin Lorber (eds.), *Spielwelt—Weltspiel*, Munich: Kopaed 2014, pp. 73-84.

ly a byproduct of playing the game. However, the effects observed and hypothesized by LeBlanc & Chaput are valid: they report an increase of time spent walking and an increase in daily step count, the replacement of indoor time with active outdoor time and that "it seems that many people are using 'Poké-Walks' as an excuse to go out with friends, or engage with other POKÉMON players"[16]. These findings are in accordance with Tateno et al. (2016), who hypothesize that POKÉMON GO may help with severe social withdrawal, a phenomenon especially found in Japan and that POKÉMON GO is being used even by the elderly, even though those players, who are already familiar with POKÉMON, are more likely to be attracted to the game.

As mentioned before, POKÉMON GO does not actively create social environments, by providing multiplayer features for example. It is more or less a single player game that can be played next to other players, rather than with them. Nevertheless, certain hotspots like Poké-Stops draw many POKÉMON trainers to them. Interestingly, the social environment is only accessible outside of the AR, in offline interactivity with other players. Social environments are therefore passively created by the game, when players gather and interact. That said, players also need to uphold the social environment for it to continue to exist. In turn, those who participate in the social environment may also alter and shape it. This has led to interesting and creative experiments, such as raising awareness during POKÉMON GO walks by Westborough Public Library, who have discovered that their organization is a Poké-Stop and attracted many people, or the C.S. Mott Children's Hospital, which is using POKÉMON GO to create a family friendly environment for patients and family and to encourage patients to participate in therapy.[18] Dorward argue that POKÉMON GO can be used to promote conservation, utilizing the player's motivation to go outside and discover nature.[19] They specifically point out various in-game features, for example that certain types of Pokémon will more likely appear at certain locations (e.g. water type Pokémon near bodies of water). In all these cases, organizations make use of the extrinsic motivation to go outside created by POKÉMON GO and convert it into either an educational or a social event, making use of the player's interest to interact with his environment in new ways.

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18 Venzin, Megan: "Tie into the Pokémon GO Craze," in: *Special Events Galore* 16 (2016).

19 Dorward, Leejiah J./Mittermeier, John C./Sandbrook, Chris/Spooner, Fiona: "Pokémon Go: Benefits, Costs, and Lessons for the Conservation Movement," in: *Conservation Letters* 10/1 (2017), pp. 160-165.

CONCLUSIONS

POKÉMON GO is a single-player augmented reality game that motivates players to go outside, search for and catch augmented Pokémon through mobile technology. Though POKÉMON GO is a single-player game, players tend to play side-by-side, introducing a player-induced social environment to the game. While the game itself is solely digital, and the interactive content is augmented, the social environment exists exclusively offline. This allows for the unique possibility to make use of a social environment that is not restricted to participants within the game (as is usually the case in multiplayer games) but open to third parties, such as organizations and educators. From a scientific point of view, it might be interesting to investigate how Pokémon trainers are creating and upholding social environments, as well as how augmentations can be used to create specific content to motivate participants, not only to be entertained, but also be educated. Of course, there have been many successful projects that can be categorized as 'Edutainment', but most of them focus on interactivity like MINECRAFT[20] in a VR game setting, rather than making use of social environments in AR. The above mentioned examples point to a shift in how Edutainment can be made more socially interactive as demonstrated by POKÉMON GO.

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Spaces of Possibility?

Aspects of Spatiality in Online Role-Playing Games

ARNE SCHRÖDER

Since Johan Huizinga's[1] reflections on the magic circle, the limits of what happens within a game and what occurs outside have been a fundamental topic of game studies. More recent discussions on the magic circle (see, for example, the works of Marinka Copier,[2] Jesper Juul[3] and Mia Consalvo[4]) have highlighted the fact that the supposedly confined spatial structure of the game world is increasingly contested by issues of player agency and transitions between in-game and out-of-game activities. This is especially clear in the case of online games, which, in addition to players' interactions with game objects, include social interactions between players. The resulting function of the game environment as a social space is critical to an understanding of spatial arrangements in (online) games.

Using the massively multiplayer online role-playing game (MMORPG) WORLD OF WARCRAFT[5] as an example, the following paper discusses different

1 Huizinga, Johan: *Homo Ludens: A Study of the Play-Element in Culture,* London: Routledge 1949.

2 Copier, Marinka: *Beyond the Magic Circle. A Network Perspective on Role-Play in Online Games*, unpublished dissertation, Utrecht 2007.

3 Juul, Jesper: "The Magic Circle and the Puzzle Piece," in: Stephan Günzel et al. (eds.), *Conference Proceedings of The Philosophy of Computer Games* 2008, Potsdam: Potsdam University Press 2008, pp. 56-67.

4 Consalvo, Mia: "There Is No Magic Circle," in: *Games and Culture* 4 (2009), pp. 408-417.

5 WORLD OF WARCRAFT (Blizzard Entertainment 2004, CA: Blizzard Entertainment)

aspects of spatiality in online role-playing games in terms of their social significance and the interrelations between different types of game space. A research project on agency and mediality in MMORPGs serves as an empirical basis. The research focuses on the MMORPG WORLD OF WARCRAFT and utilizes concepts from game studies and the methods of participant observation and problem-centered interviewing[6] in order to analyze modes of identity construction and how players' bodies enter the virtual world. The players' relations to their avatars were examined as well as relations to their co-players. Player quotes used in this article are translated excerpts from problem-centered interviews.

Spatiality is significant for online gaming not only with regard to the topology of the game world (both physically by the distribution of players to different realms, as well as within the game world by the division into territories and instances), but also regarding layers and modes of communication offered by the game interface. The experience of space is essentially dependent on the players' own expectations and modes of play. This is affected for instance by gendered gaming experiences as well as modes of access to gaming in general and the given game in specific, and by the freedom of choice for actions within the game as well as for interactions with other players. The effects of different attributes with regard to the experience of spatiality in the game will also be discussed.

WHERE IS THE MAGIC CIRCLE?

Game studies as an academic discipline of researching games and the culture of gaming has been concerned from the beginning with questions of how to theorize games and their properties and with which methods they should be investigated. Johan Huizinga emphasized the boundaries of rule-based play and points to its relation to the "magic circle"[7] as a form of game space. According to Huizinga, however, play does not emerge from the physical arrangement of its contents or by entering a playing field, but from recognizing the game's rules: "as soon as the rules are transgressed the whole play-world collapses."[8] The magic circle is thus a construct that is maintained by the players and ceases to exist as soon as the rules are transgressed. In this context, Huizinga refers to a

6 Witzel, Andreas: "Das problemzentrierte Interview," in: *Forum: Qualitative Social Research* 1 (2000), Art. 22.

7 J. Huizinga: *Homo Ludens*, p. 11.

8 Ibid.

further characteristic that is rather a link between players and the game, and at the same time makes comprehensible why the concept of the magic circle has become so prominent: "Play casts a spell over us; it is 'enchanting', 'captivating'."[9]

Player enchantment and captivation are manifested in various aspects of play and gaming as a cultural practice: from the emotional attachment to game objects and game states through creating and interacting with imagined symbolic worlds to the idea of immersing oneself in these worlds and bringing them to life. This list, however, already shows possible starting points of a dismantling, or rather, disenchantment of the magic circle. In several contexts, the idealization of the magic circle can be problematized and its limits exemplified. This is done, for example, by pointing to transitions between in-game actions and changing the game as a system by the players, e.g. through modding, fan fiction, or user-generated content.[10] Negotiation of boundaries of the game is an integral part of play and became a common element of game models from Huizinga to Bateson[11] or Juul and signifies an aspect of play activity that is not as magical or enchanting.

Space in games works as a frame of reference for the player's actions and decisions to have an impact. Katie Salen and Eric Zimmerman[12] describe the sum of the possibilities for actions in computer games as the "space of possibility"[13]: "It is the space of all possible actions that might take place in a game, the space of all possible meanings which can emerge from a game design."[14] The experience of agency and possible courses of action within a game, however, cannot be derived solely from the nature of the game's rules, its user interface, or the game world, but are related to further spatial dimensions, which are assumed quite naturally in speaking about game situations and experiences. The concept of the magic circle thereby was sharpened in several ethnographies of online

9 Ibid., p. 10.

10 Cf. Calleja, Gordon: "Digital Games and Escapism," in: *Games and Culture* 5 (2010), pp. 341-342.

11 Cf. Bateson, Gregory: *Steps to an Ecology of Mind: Collected Essays in Anthropology, Psychiatry, Evolution, and Epistemology*, San Francisco: Chandler Pub. Co 1972.

12 Salen, Katie/Zimmerman, Eric: *Rules of Play. Game Design Fundamentals*, Cambridge/Mass.: MIT Press 2004.

13 Ibid., p. 67.

14 Ibid.

role-playing games.[15] Marinka Copier criticized a simplistic understanding of the magic circle as an "innocent imaginary space that exists within its own boundaries of space and time, seemingly untouched by social reality, work, and power"[16] and pointed out that game space is not merely an already given artificial environment:

"[E]ven rules alone do not create a preexisting artificiality. Games need to be played, and players actively influence each other as well as what the system of the game becomes. Thus, the game-play experience is always the result of the interplay between different cognitive frameworks on rules, play, and culture."[17]

GENDER AND SPACE IN MMORPGS

The concept of the game world marks an essential property of avatar-based computer games.[18] These games construct their own spaces where the actual gameplay takes place. "Spatial Exploration"[19]—exploring and discovering pathways, objects and partly hidden mechanisms in a virtual topography—is an essential element of many computer game genres.

The first game systems that allowed non-local network connections to share the player's presence in a virtual environment were Multi-User Dungeons like MUD1[20] by Richard Bartle and Roy Trubshaw. Long before instant messengers and chat rooms were accessible to a broad portion of the population, the first users of MUD1 experienced a distinct kind of online interaction. Roy Trubshaw

15 Cf. Boellstorff, Tom: "A Typology of Ethnographic Scales for Virtual Worlds," in: William Sims (ed.), *Online Worlds. Convergence of the Real and the Virtual*, Bainbridge/London: Springer 2010, pp. 123-133.

16 M. Copier: *Beyond*, p. 133.

17 Ibid., p. 139.

18 Klevjer, Rune: "Enter the Avatar: The Phenomenology of Prosthetic Telepresence in Computer Games," in: John R. Sageng et al. (eds.), *The Philosophy of Computer Games*, Dordrecht: Springer 2012, pp. 17-38.

19 Squire, Kurt/Jenkins, Henry: "The Art of Contested Spaces," in: Lucien King (ed.), *Game On. The History and Culture of Videogames*, London: Laurence King 2002, p. 66.

20 MUD1 (1978, ●: Richard A. Bartle/Roy Trubshaw)

implemented rules from the Dungeons & Dragons[21] rule set and thus combined online communication and role-playing games, which affected numerous successors from early CRPGs (Computer Role Playing Games) to more recent MMORPGs. The conventions and techniques for chat communication and player interaction introduced by MUD1 evolved to standards that can still be found in current online games.

WORLD OF WARCRAFT has a specific spatial structure in the organization of its contents and players. This includes the separation of millions of players into different realms, each realm containing its own copy of the game world and hosting several thousand players. The game world itself is in turn divided into different instances which players can navigate.

In WORLD OF WARCRAFT the position of the avatar does not always correspond to common conventions of natural space—for example the game allows teleportation to a different place within the game world, like a battlefield or a dungeon. The topological structure of different types of game space thereby differs from the topography of the game world. This can be exemplified by specific forms of communication in several respects, like the whisper or the guild chat, by which players can communicate with each other across diegetic boundaries within the game world.

The dungeon finder, a game principle introduced with the WRATH OF THE LICH KING[22] expansion set, offers a way to queue up with a group of players to enter a dungeon in the game world. In order to shorten the waiting period, the queue consists of players from different realms, thus transgressing the usual confinement of player interactions to a single realm. In this transition of game spaces, the separation between topography and topology of the game world is realized both on the level of actions within the game world as well as on the level of the technical organization of game data and client-server communication. This leads to players from different realms meeting each other for a short period of time in the dungeon, only to be separated afterwards with little chance of ever meeting again in the game. This arrangement has an impact on implicit conven-

21 DUNGEONS & DRAGONS (TSR, Inc. 1974, ●: Gary Gygax/Dave Arneson)

22 WORLD OF WARCRAFT: WRATH OF THE LICH KING (Blizzard Entertainment 2008, ●: Blizzard Entertainment)

tions and communication habits, which can be observed in a lack of social interaction in player-to-player communication in these so called pick-up groups.[23]

Aspects of the representation and articulation of gender attribution in games have been studied extensively. The variety of gender options, as it existed in some MUDs,[24] is a contrast to rather stereotypical, binary gender options in graphical computer role-playing games. In the case of the latter, the design of the game world tends to transport established assumptions about gender and sexuality.[25] In the gaming situation, however, the player's own concepts of gender and modes of interaction are mediated by the specific arrangement of the game. Habitual forms of gender attribution and social expectations for instance are modified through the game's narrative, gender-independent accessibility of professions, and a lack of congruence between the avatar's visible appearance and the player's gender. Social assumptions come into play. Simultaneously socially established gender expectations and norms are transferred into the game.

Boundaries between the game space and everyday life are, in particular, transgressed through game rules and available communication layers when playing games. This process is not limited to the connection between the room the game is played in and the game world, but also makes tangible other player locations. This may occur by background noise in voice chat, like the ringing of a door bell or a siren on the opposite side of the audio connection, creating a link between player spaces that are not game related.[26] Even in purely textual chat these kinds of artifacts and links to other player spaces do occur and can be experienced as a sometimes undesirable incursion as illustrated in the following quote from Rebecca, a female WORLD OF WARCRAFT player, describing a conversation she experienced in her guild:

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23 Cf. Eklund, Lina/Johansson, Magnus: "Social Play? A Study of Social Interaction in Temporary Group Formation (PUG) in World of Warcraft," *Proceedings of DiGRA Nordic 2010*.

24 Cf. Danet, Brenda: "Text as Mask: Gender, Play and Performance on the Internet," in: David Bell (ed.), *Cybercultures. Identities & Bodies in Cyberculture*, London: Routledge 2006, pp. 80-105.

25 Cf. Ducheneaut, Nicholas, et al.: "Building an MMO With Mass Appeal: A Look at Gameplay in World of Warcraft," in: *Games and Culture* 1 (2006), pp. 281-317.

26 Cf. Hemminger, Elke: *The Mergence of Spaces. Experiences of Reality in Digital Role-Playing Games*, Berlin: Edition Sigma 2009.

"In guild chat. Woman types: 'Honey, I'll go to bed now, will you come?' Corresponding guy types: 'Wait, I'm in the Ini yet.' Then she types again: 'Well, but sweetheart, I already warmed the bed'/ Well, this is of course not quoted verbatim, but she then tells she already is prepared and is expecting him in bed and—you practically see pink flowers ascending from the guild chat, and you say to yourself: 'this is just too much information.' I am virtually forced to be in their bedroom."[27]

She tells of a situation in which she found herself in a place she did not want to be in. Associations ("pink flowers") and text fragments directly point to an increasingly invasive link between the room she plays in and her fellow guild members' bedroom.

The role of the game's modes of communication for the formation of spaces especially becomes important when game-related concerns take a back seat to the game's function as a social space. In these cases, social presence within the game environment is not created by proximity in terms of avatar placement and topographic aspects of the game world, but via joint audio communication, which can be perpetuated even after closing the actual game application.

A different form of spatiality in MMORPGs is the formation of guilds. While many players set their preferred playing style as the point of reference for choosing a guild, others orientate by affiliation to a social group or an identity category. This is especially the case with women's or queer guilds. These guilds are a rare variant in WORLD OF WARCRAFT, but can be vital for their members' gaming experience. Reasons to join such a guild are diverse, from favoring distinct ideas of discursive terms or a concept of gender identity to the desire to escape a gaming culture that is perceived as sexist and dominated by male gamers. In the

27 Untranslated quote: "Also beim Gildenchat. Frau schreibt/ 'Bärchen, ich geh jetzt ins Bett, kommst du nach'. Dazugehöriger Mann schreibt/ 'wart mal, ich bin noch kurz in der Ini'. Dann fängt Frau wieder an/ 'ja, aber Schatz, ich hab doch schon die die die Bettdecke warm gem-'/ =also, (-) es ist jetzt (-) natürlich nicht richtig wiedergegeben, aber sie erzählt dann, was sie schon alles vorbereitet hat und ihn noch im Bett erwartet und (...) du siehst die rosa Blümchen praktisch schon aufsteigen von dem Gildentext, und du denkst dir einfach nur so/ 'ich will es doch gar nicht wissen'. Ich werde praktisch dazu gezwungen, bei denen im Schlafzimmer zu sitzen." (Interviewee Rebecca)

latter case the guild can be conceived and actively constructed[28] as a safe space from an otherwise hostile environment.[29]

Some players even see their guild as a possible place for the pursuit of political purposes, as in the case of Robert:

"These are so many young people who play games that can be reached, and/ (...) people are still out on the street and distribute flyers, while most of the people are sitting at their PC/ And um/ so I had the feeling that there is a demand somehow/ that there is a gap to be filled, which is why I initiated this guild project, among other things."[30]

With his guild, Robert is pursuing the goal of reaching other players and taking up a political stance. He also sees it as a possible counterbalance to the shortcomings of political engagement in online spaces.

MEDIALITY AND SOCIAL SPACES

In an MMORPG, the player's actions are mediated not merely by their avatar, but also by other means provided by the game interface. In particular, the significance of textual and verbal modes of communication must be considered for an understanding of the game as a social space. A simultaneity of acting through an avatar situated in the game world and non-localized forms of communication and matching mechanisms complicates the concept of avatar-based player interactions. The use of voice chat especially shapes the experience of player-to-player interactions and social presence within the game world. Creating more tangible

28 Cf. Collister, Lauren B.: "Surveillance and Community: Language Policing and Empowerment in a World of Warcraft Guild," in: *Surveillance & Society* 12 (2014), pp. 337-348.

29 Cf. Pulos, Alexis: "Confronting Heteronormativity in Online Games: A Critical Discourse Analysis of LGBTQ Sexuality in World of Warcraft," in: *Games and Culture* 8 (2013), pp. 77-97.

30 Untranslated quote: "Das sind so viele junge Menschen, die das spielen/ die da erreicht werden könnten, und/ (...) die Leute stehen noch auf der Straße und verteilen Flyer, während n Großteil der Leute halt vorm PC sitzen / und ähm/ also ich hatte auch das Gefühl, dass man da quasi n Bedarf irgendwie/ also dass da ne Lücke zu füllen wäre, weswegen ich auch dieses Gildenprojekt irgendwie gegründet hab, unter anderem." (Interviewee Robert)

connections between distinct player locations influences the player perception of the game space itself. Accordingly, forms of discrimination and hate speech articulated through this mode of communication are more likely to have a negative impact on the play experience. The experience of such phenomena makes it comprehensible that a shared game activity does not function as a limit to or protection from social inequalities and power structures, nor does every action in a game lose its potentially harming effect simply because it takes place within the magic circle of the game. As a result, players do create and model their own spaces within a game to compensate for any kinds of intrusions or undesired experiences. The perspective of the player illustrates different concepts and expectations in regard to spatial functions of the game—being a home to playfulness, a shelter from everyday life, or even a political sphere.

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Beyond the Multi-Player

Exploring Sociality in Single Player Videogames

KELLY BOUDREAU

From massively multiplayer online games to social network games, digital games offer a broad range of opportunities for sociality and social interaction. When thinking about sociality and games, rarely do single-player games come to mind, and if they do, it is often in juxtaposition with multi-player games. Yet, it could be said that all human interactions—with other people, objects and spaces—are social in nature.

From this perspective, this paper will discuss different aspects of sociality in single-player games including player engagement with AI, the game's environment, narrative, and play context all which shape a player's social understanding of a game. In doing so, we can consider how playing single-player games are social within themselves, and how they inform other types of social videogame play.

INTRODUCTION

As the concept of social interaction was developed through the study of human interaction,[1] it is no wonder that research on sociality in digital games has predominantly focused on games that are centred around player to player interac-

1 Turner, Jonathan H.: *A Theory of Social Interaction*, Stanford: Stanford University Press 1988.

tions.[2] From massively multi-player online games (MMOGs) and social network games (SNGs), to collocated single-player gameplay, games that focus on playing with others in some capacity fall under some of the most researched games and genres.

To contextualize, massively multi-player online games are social in that gameplay and progression is designed around necessary cooperation and interaction with other players. Groups and guilds are supported by the game through a range of communication tools including various chat options which allows for players to strategize, coordinate, and socialize during gameplay. Social network games follow a similar design to a slightly different end. Focused on using a player's social network (such as Facebook) in order to progress, by requiring friends from the host social network to either join the game, give in-game boosters or lives in order to progress. The sociality of social network games is not so much within the game itself, but lies rather in the fact that you must use your social network in order to play and progress.[3] Finally, single-player games are also rich with opportunity for social gameplay through co-located gameplay,[4] through competition,[5] or through multi-player cooperative gameplay.[6] The interactions derived from these different types of games all privilege human to hu-

2 Kowert, Rachel/Quandt, Thorsten: *New Perspectives on the Social Aspects of Digital Gaming: Multiplayer 2*, London: Routledge 2017; Quandt, Thorsten: *Multiplayer: The Social Aspects of Digital Gaming*, London: Routledge 2013.

3 Rossi, Luca: "Playing Your Network: Gaming in Social Network Sites," Dec 2010, https://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID1722185_code1587676.pdf?abstractid=1722185&mirid=1&type=2

4 Voida, Amy/Saul, Greenberg: "Wii All Play: The Console Game as a Computational Meeting Place," in: *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (2009)*, pp. 1559-1568.

5 Vorderer, Peter/Hartmann, Tilo/Klimmt, Christoph: "Explaining the Enjoyment of Playing Video Games: The Role of Competition," in: *Proceedings of the Second International Conference on Entertainment Computing*, 2003, pp. 1-9.

6 Seif El-Nasr, Magy/Aghabeigi, Bardia/Milam, David/Erfani, Mona/Lameman, Beth/Maygoli, Hamid/Mah, Sang: "Understanding and Evaluating Cooperative Games," in: *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, ACM (2010)*, pp. 253-262.

man interaction in some form as the defining element of 'social' in varying degrees, whether synchronous or asynchronous.[7]

Beyond the direct social interaction offered through games played with other individuals in some capacity as described in the previous paragraph, these types of games also afford players a form of gaming capital.[8] This is to say that playing video games, either with other people directly or not, gives players a common social ground through which they can connect through the knowledge and experience learned through gameplay. The value of this gaming capital ranges depending on the social group. But the key point in the context of this paper is that when talking about the social aspect of digital gameplay, at the very least, it acts as social glue.

The aim of this paper is to address the ways in which single player games, when played alone and with no other social interaction or intent (i.e., gaming capital), have aspects of sociality within the act of gameplay between the player and the game itself.[9] In order to begin to consider the different elements of the single player game that has the potential to be social, contemporary definitions of social, sociality and sociability will be unpacked in order to disentangle terms that are often used interchangeably in research and the design of video games. Once terminology has been delineated, I will discuss the different elements of single player games that players interact with and how they can be considered social. In doing so, it is possible to begin questioning the ways in which players learn about sociality through designed objects and interactions. By considering the sociality of single-player games, questions regarding the design of artificial intelligence (AI) within digital games will be posited.

It should be noted that this paper is grounded in theories of possibility. I am not trying to vehemently argue a claim, rather, my intention is to open a discussion on the types of sociality that are possible in single-player games if we remove the human to human element of social interaction. Furthermore, while it

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7 Boudreau, Kelly/ Consalvo, Mia: "The Sociality of Asynchronous Gameplay: Social Network Games, Dead-Time and Family Bonding," in: Michele Willson/Tama Leaver (eds.), *Social, Casual, Mobile Games: The Changing Gaming Landscape*, New York: Bloomsbury 2016.

8 Consalvo, Mia: *Cheating: Gaining Advantage in Videogames*, Cambridge, Mass.: MIT Press 2009; Mäyrä, Frans: "Gaming Culture at the Boundaries of Play," in: *Game Studies* 10/1 (2010).

9 Simon, Bart: "Beyond Cyberspatial Flaneurie: On the Analytic Potential of Living with Digital Games," in: *Games and Culture* 1/1 (2006), pp. 62-67.

could be argued that interaction with objects within a game is an inherently social interaction with the game's designers in that the game and its contents are fundamentally human constructs, the goal of this talk is to consider the relationship between a player and the game system they engage in.

TERMS & CONTEXTS

As terms around social interaction are often used interchangeably, it is imperative that we disentangle the definitions of three of the most commonly used terms as they are related to social interaction—*social*, *sociality* and *sociability*. While they are all related, the nuances between them matter in making the argument for the sociality in the solo-play of single player games. In doing so, it will be possible to discuss the different elements and events that occur in single player games that have the potential to be social.

The term *social* is an adjective that relates to (or involves) activities in which people spend time with other people (talking or doing *enjoyable* things) (Oxford English Dictionary Online). A simple and quick online search of definitions further supports this notion of the enjoyment of being with others. Each definition assumes that *social* is a human activity that occurs solely between individuals.

Bruno Latour defines social interaction as follows:

"In the sociological literature, social interaction presupposes the presence of several constitutive elements. There must be at least two actors; these two actors must be physically co-present; they must be linked by behavior that entails an act of communication; and finally, the behavior of each must evolve as a function of modifications brought to bear on the behavior of the other in such a way that there is an emergence of unexpected properties that are more than the sum of the competencies in use by the actors before this interaction."[10]

Within this quote, there are several factors that I will revisit later as I move toward unpacking what type of interactions are social in single-player gameplay. The first element to highlight is that there must be two *actors* and they must be physically *co-present*. This is to say that two *actors* must be in the same place and in direct interaction. The use of co-present in this context could be debated,

10 Latour, Bruno: *Aramis, or the Love of Technology*, Cambridge, Mass.: Harvard University Press 1996, p. 228.

but for the sake of this paper, we can agree that it requires two actors to be in direct contact in some manner. Not only must the actors be co-present, they must also be engaged in the act of communication, which infers an explicit reciprocal interaction between the two. Finally, there must be some form of modification of behaviour of the other that is more than the sum of the interaction. This last point helps situate the type interaction beyond simple input/output found within computational interactions. In traditional sociological terms, social interactions are the cornerstone of identity and development of self,[11] which is important in terms of differentiating between different types of interaction.

Table 1: Types of Sociality[12]

	One-Dimensional	**Multi-Dimensional**
People- or Group-Based	*Network-centered sociality* A sense of belonging arises from connectivity in a network. The degree of sociality stems from the number of people known, social invitations and so on.	*Community-centered sociality* A feeling of companionship arising from a community in which participation and membership shape social relations over time.
Artifact-Based	*Object-centered sociality* A shared experience and meaning arises from objects valued as belonging to or characteristic for a certain group or an in-crowd.	*System-centered sociality* A mode of belonging based on the feeling of participating in a social software system.

The term *sociality* relates to the character or disposition of being social where one is naturally inclined to like and interact with others. It is an inherent quality of an individual (or object). The way in which things (and people) are positioned in relation to others encourages sociality. In this way, we can think of in-game content as having a social disposition in that everything designed within a game

11 Stryker, Sheldon/Burke, Peter J.: "The Past, Present, and Future of an Identity Theory," in: *Social Psychology Quarterly* 63/4(2000), pp. 284-97.

12 Bouman, Wim/Bolke de Bruin, Tim/Hoogenboom, Ard/Huizing, René Jansen/Schoondorp, Mark: "The Realm of Sociality: Notes on the Design of Social Software," in: *ICIS 2007 Proceedings*, 2007.

has been purposefully placed and therefore has the potential to facilitate social interaction between the player and the game's content.

In their article *The Realm of Sociality: Notes on the design of social software*, aiming to put forth the position that sociality cannot be designed, only designed for, Bouman et al. chart out the different types of sociality within social software.

The research on social interactions in games as presented in the introduction focuses predominantly on the *people- or group-based* section of the grid. However, if we look to artifact-based types to start thinking about what this means in solo-gameplay, object-centred sociality, which focuses on "sharing the experience and meaning that arises from objects valued as belonging to or characteristic for a certain group or an in-crowd," we can think of the universe within the game-world with the characters, objects and environment of the game. The value of these objects both within the fiction of the game-world and how that shapes player choices and behaviour in a way that changes the way they interact with the game-world.

Addressing the multi-dimensional quadrant of object-centred sociality, which focuses on "a mode of belonging based on the feeling of participating in a social software system," we can begin to consider what that means within the context of digital gameplay generally, and single player games specifically. While the most obvious understanding of this falls under the category of social networks and social network games, however if we are to think of the single-player games, we can extrapolate this to a mode of belonging based on the feeling of participation within the game. In single-player, solo-gameplay, the objects have meaning through the played experience, not defined through shared experience, but rather through the player's interaction with the game objects directly. In this way, we can consider the sense of belonging to the space (community, environment, etc.) within the game—which is system-centred sociality—as it is created through object-centred sociality within the system. In solo-play, these objects shift from boundary objects between humans and become the surrogate for humans—or what Latour called *actors*—within the game system.

Finally, *sociability* is the skill, tendency or property of being social or *sociable*. To be sociable is to interact well with others and to derive pleasure from these interactions.[13] While many social interactions occur as part of larger social contexts and are often not always enjoyed, Simmel defines sociability as "the

13 Sinunel, Georg/Hughes, Everett C.: "The Sociology of Sociability," in: *American Journal of Sociology* 55/3 (1949), pp. 254-261.

play-form of association" and has "no ulterior motive". Of course, it is much more complex than that, but at its core, sociability is about the pleasure of interaction.[14] If we think about sociability within the context of single-player gameplay, it can be differentiated between purpose-led gameplay (for the advancement of the narrative or other game-defined progression) and the interaction with the environment and in-game artefacts/objects for the sheer pleasure of engaging with them.

WHY DO THESE DEFINITIONS MATTER?

As you can see by the definitions, the differences between the terms, though all rooted in the broader concept of social interaction, focus on different aspects of being social. By focusing on the differences, the aim is to reduce conflation of meaning and use within the context of discussions on social interactions and sociality in digital gameplay. A more nuanced understanding of these concepts allows us to extrapolate and re-conceptualize their meaning when associated with single-player videogame play. In this manner, it can help us move away from understanding sociality as requiring human to human interaction and redefine *actors*[15] which will aid in expanding our understanding of:

- Game environments as social
- AI / NPCs as other 'players'
- How players are affected / learn from different types of 'social' interactions
- The consideration of design implications (ethics, etc.)

14 Stenros, Jaakko/Paavilainen, Janne/Mäyrä, Frans: "The Many Faces of Sociability and Social Play in Games," in: *Proceedings of the 13th International MindTrek Conference '09: Everyday Life in the Ubiquitous Era*, 2009, pp. 82-89.

15 It should be noted that Latour extensively discusses *actors* in his work on actor network theory. Latour, Bruno: *Reassembling the Social: An Introduction to Actor-Network-Theory,* Clarendon Lectures in Management Studies, Oxford: Oxford Univ. Press 2007. This is outside the scope of this paper.

SINGLE-PLAYER GAMES: SOLO-PLAY

While single-player games can be social (as defined above as being engaged in some manner with other people either directly or indirectly), this section is concerned with solo-gameplay. That is, gameplay where the player does not interact with other people in any way within or external to the game. The focus of this section is on the different types of interactions that are afforded within a game directly, and to engage in a discussion regarding the extent to which these interactions are, or are not social, and in what contexts can they be considered as such.

SOCIALITY OF GAME ENVIRONMENTS

What is the social character of game environments through play experience of spatiality and object interaction? Though not typically thought of as the most social part of a game, the game's environment communicates a lot of information to the player. From foreshadowing events to come for the player through ominous music or letting a player know what direction to follow by the use of lighting in the distance, a game's environment tells the player information they need to know to be able to (successfully) navigate, play, and complete the game. Drawing on definitions of sociality noted above, the way in which the environment is designed can encourage the player to interact with the game-space beyond a purely functional manner, leading the player to interact with the game environment for pleasure as well as function.

While it could be argued that these interactions are not necessarily social in that the elements of the game that are communicative are purposeful in nature, there is the possibility for sociality in that the player learns from the game system. Through the navigation of and interaction with the game's environment, players situate themselves within the social world of the game. Thinking back to Latour's definition of social interaction, it is within the process of learning through interacting with game's environment—an evolution of behaviours based on interactions—that we can begin to consider the ways in which player interaction has the potential to alter both the meaning and the structure of the environment beyond the input/output level of computational interaction. Likewise, some games are designed in a way that responds in unexpected (or procedurally generated) ways, which further supports Latour's condition.

SOCIALITY OF OBJECTS

Returning to the definition of sociality outlined above, one of the aspects of sociality is the positioning of objects in relation to each other.[16] Much like the filmic tool of mise-en-scène, where all the objects within a scene are placed meticulously in relation to each other in order to set the scene and communicate information to the viewer, the objects within a game world are placed with equal consideration. Players bring with them their existing understanding of objects, but also learn how to understand objects within the context of the game, which can be in conflict with their everyday understanding. The meaning of an object within the game is defined by its environment which can be unique to the particular game, and even change through the course of a game in both meaning and function.

It is, as always, debatable to what extent objects are social within a traditional framing of the concept, but if we agree that objects have meaning and can communicate information through their proximity to other objects within the game, then we can begin to consider a reconceptualised understanding of sociality in single-player games. Objects have both potential and actualized meanings that are dependent on the player's interaction. Returning to Latour's criteria of behaviour change unexpectedly through the interaction, it can be argued that objects in (some) games can change meaning / function through interaction and player use. Of course, this is largely a computational design aspect, but it is important to consider its sociality in the ways in which it informs players' broader understanding of objects both within the game, as well as in their everyday lives.

SOCIALITY OF AI / NPC'S

Perhaps the most obvious aspect of a single-player game when considering the sociality of solo-play is the interaction with non-playing characters (NPC's) and the artificial intelligence that drives them.[17] Whether their role is cooperative as seen in games that provide the player with a squadron to fight off the horde of enemies, or competitive as the enemy the player is fighting, NPCs often stand-in

16 Knorr Cetina, Karin: "Sociality with Objects: Social Relations in Postsocial Knowledge Societies," in: *Theory, Culture & Society* 14/4 (1997), pp. 1-30.

17 Simon, Bart: "Beyond Cyberspatial Flaneurie: On the Analytic Potential of Living with Digital Games," in: *Games and Culture* 1/1 (2006), pp. 62-67.

for other humans. As such, it should not be much of a stretch to consider the ways in which interactions with NPCs can be seen as social. Furthermore, it could be argued that through AI, NPCs can be sociable as well as social.

However, while the temptation to attribute sociality to NPCs and to AI in the broader context, there are several issues that should be considered. First, the level of believability is important to the level of engagement on behalf of the player.[18] In games where players are intended to cooperate with NPCs, the more realistic the artificial intelligence, the more apt players are to engage with the NPC beyond pure utilitarian purposes. If part of sociality is the point of pleasure of engagement beyond any ulterior motives,[19] than the level of intelligence and procedurally generated, realistic interactions of an NPC's AI is required in order for there to be engagement with NPCs purely for the player's enjoyment (and not merely an in-game purpose). When NPCs are flat, one-dimensional and their reactions to the player's engagement with them are easily predictable, the potential for sociality diminishes. In good design, player choices impact on NPC behaviour in ways that are unpredictable and furthers the potential for a truly game-oriented sociality.[20]

SOCIALITY OF NPC <> NPC INTERACTIONS

Finally, another interaction that is outside of the player's agency, interactions between non-playing characters should be considered within the frame of sociality of solo-play in single-player games. Understandably, the first question that comes to mind is 'What makes this *social*'? While NPC <> NPC interactions do not fit within Latour's definition, what is important is to think about what do these interactions tell the player about sociality and social interaction. If individuals can learn about social life through the passive observation of everyday life, what do they learn through NPC >NPC interactions? It is in thinking about this question do we return to the issue of realistic versus idealized interactions, be-

18 Sweetser, Penelope/Johnson, Daniel/Sweetser, Jane/Wiles, Janet: "Creating Engaging Artificial Characters for Games," in: *Proceedings of the Second International Conference on Entertainment Computing 1-8*, Carnegie Mellon University 2003.

19 G. Simmel/E. Hughes: The Sociology of Sociability.

20 Lankoski, Petri/Björk, Staffan: "Gameplay Design Patterns for Believable Non-Player Characters," in: *Situated Play: Proceedings of the 2007 Digital Games Research Association Conference*, 2007, pp. 416-423.

lievability and player expectations of how NPC's should interact within the game, and finally, how these interactions are contextualized within the fiction of the game and its environment.[21] As such, these wholly non-human interactions may not be social in the traditional sense but within the context of the game, they have the potential to fulfil some social elements. However, without the ability to interact with or impact NPC ◂▸ NPC interactions, it could be argued that they simply have the potential to influence the player's sociality within the game in different contexts. Indeed, observation of this type of interaction can communicate information that can alter other interactions in potentially meaningful and unexpected ways.

CONCLUSIONS & THINGS TO CONSIDER...

Revisiting Latour's definition, how does single player solo-play fit into the definition? If we review a few of the key elements, Latour stated that "There must be at least two actors". In this case, I believe we can agree that players have the potential to engage with multiple actors such as the landscape and geography, in game objects, and non-playing characters. Furthermore, it could be argued that NPC ◂▸ NPC interaction can be considered *two actors* within a social communicative system, even if it is debatable to what meaningful extent. Addressing the requirement that "these two actors must be physically co-present"; we can argue that it is through the act of gameplay that interaction occurs within the gamespace, therefore fulfilling this criterium. As such, while the player is actively engaged, even if simply at the level of exploration (perhaps even more so at this level in terms of engagement for the sake of pleasure...), there is always a co-presence between actors.

As the conditions become a bit looser, or open to interpretation for the sake of opening a discussion on the potential of sociality in single-player games, Latour states that "they must be linked by behavior that entails an act of communication". At the very base of gameplay is the act of communication between player and game system. Through active play with the game's environment, objects, and NPCs, information is communicated to the player and the player, through their actions, communicate in return (to the game system). While it can

21 Lim, Sohye/Reeves, Byron: "Computer Agents versus Avatars: Responses to Interactive Game Characters Controlled by a Computer or Other Player," in: *International Journal of Human-Computer Studies* 68/1-2 (2010), pp. 57-68.

be argued that this is simply at the computational level, there is room for discussion of the degrees of communication that occur in different genres and game titles.

Finally, perhaps the most debatable condition for solo-play in single-player games to be considered social is the requirement that "the behavior of each must evolve as a function of modifications brought to bear on the behavior of the other in such a way that there is an emergence of unexpected properties that are more than the sum of the competencies in use by the actors before this interaction". The extent to which this occurs, again, is open for discussion, but games that are designed to be procedurally generated or have more emergent AI behaviours have a broader potential for meaningful exchange of communication and interactions to occur that offers evolved modifications of the both the player and the game they are playing to some capacity.

Again, it should be noted that the aim of this paper is not to be definitive and firmly state that solo-play in single player games are or are not social events. It is not my intention to argue vehemently that sociality in single player games, with the absence of other human players, always occurs in all contexts. Rather, the aim is to begin a conversation about what conditions would have to be in place if we are to consider sociality in single player games, and to what extent do traditional theories of sociality work and what definitional boundaries need to be pushed and reconceptualised in order to start thinking of solo-play as inherently social.

If we agree that there are some elements of sociality within single-player gameplay even in the absolute absence of another human (player, or for purposes of gaming capital), then it opens the discussion to broader questions around the design of AI in single player games. What are the consequences of poor AI in terms of player sociability—in the context of the game, but also in the context of a player's understanding of social human interactions? It is imperative that we explore if all interactions in a game can be considered *social*, and if so, then it begs the questions of what are the conditions / constraints of sociality? Are they technologically determined? What are the limitations of sociality in single player solo-gameplay? Does sociality in single player games (and solo-gameplay specifically) have the potential to influence other types of social interaction and understanding outside of digital gameplay, and if so, to what extent? How do these interactions contribute to player understanding of sociality in single-player games and how do they inform other types of social video gameplay?

Furthermore, there are broader implications to consider such as the role of thought in social interaction in the ways that interactions with artificial intelligence and simulated game environments in general have the potential to influ-

ence the way we think and interact within a fictional context; within a player's everyday life? What are the cultural and ideological implications? And finally, what are the design implications in terms of ethics? These questions illustrate the need for more consideration of the concept and practice of sociality in single-player games solo-play.

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Camping N00b-Tuber and Other Annoying Players

Unfairness and Its Regulation

THOMAS WEST

Imagine you are playing a nice round of CALL OF DUTY: BLACK OPS.[1] It does not matter which entry in the series. You are playing online team-deathmatch. The session starts and you are running off. You are looking around the corner, there is an explosion and you are dead. You run off again and at the same corner you die for the same reason. What happened? One of the opponents was sitting in a strategic place and used the grenade launcher in his arsenal, the bazooka or something similar. This kind of player is called a *camping noob-tuber* in the community since he stays in one spot and only uses weapons with explosive power. These kinds of players can be annoying but should they be kicked out of the match? Is camping actually an unfair way of playing or is it a legit strategy?

There are a lot of issues like this in online competitive multiplayer environments and some of them will be addressed in the following paper. But the main goal of this paper is to answer the questions: Should video games be regulated? And, if so, what would that look like? For this purpose, I will first describe the various forms of unfair play, particularly cheating. In this context, it must be clarified how cheating can even be interpreted and what practices count as cheating. Furthermore, I will outline the following terms: camping, ganking, griefing, breaking rules and doping. Then I will show the decisive role the multiplayer context plays to amplify the concept of digital regulation and its problems.

1 CALL OF DUTY: BLACK OPS (Activision 2010, O: Treyarch)

But not all aspects of unfairness in relation to games will be analyzed. This paper is restricted to unfair behavior against real players. The question if one can be unfair against oneself will be ignored completely. The focus of this paper is the unfair actions that do not directly relate to the character of the avatar. Thus, it is about styles of playing that are not authentic. To put it simply: If the role description of the played avatar says the character is larcenous and the player steals important items from his group, this would be unfair but it is unfair in the narrative context. The person plays the game in a certain specific way that is determined by his role. There is an essential difference to invulnerability because the avatar is a god or because one is cheating. For this paper, not authentic, unfair behavior is of a special concern—behavior that is not in relation to the character of the chosen avatar.

Before we get to the first part of the paper, the connection between *unfair* and *immoral* should be explained briefly. It is very important to say that morality and fairness should not be equated. While in most video games killing someone—another player or a non-player character—is immoral, it is not unfair in multiplayer shooter games to do this. In certain cases, however, unfair actions may be immoral. If rules are laid down in the form of "You should not…!" before the game starts and one joins the game, one accepts these rules and has entered into a contract which is morally obligatory. As soon as a player transgresses a rule, he acts not only unfairly but also immorally.

UNFAIR WAYS OF PLAYING

Video games like WORLD OF WARCRAFT[2] or EVE ONLINE[3] impress with their sensational and big game worlds in which the player has a lot of possibilities and meets other players.[4] But these liberties allow for a variety of ways to annoy other players. An incident in EVE ONLINE should serve as a good example.

EVE ONLINE is a fee-based massively multiplayer online role-playing game with a lot of opportunities. There is an in-game currency named *Interstellar Kredit* (ISK). Players can earn these credits not only by trading and completing

2 WORLD OF WARCRAFT (Activision Blizzard 2005, ●:Blizzard Entertainment)

3 EVE ONLINE (CCP Games 2003, ●: CCP Games)

4 Adams, Ernest: "The Designer's Notebook: Sandbox Storytelling," in: *GAMASUTRA*, August 25, 2010, http://www.gamasutra.com/view/feature/134411/the_designers_notebook_sandbox_.php, p. 1.

missions, but also by purchasing these credits with real money. In the game there are various *corporations*, each with their own command structure, of which you can become a member. A player entered such a corporation and was acting like a beginner. He worked his way up until he won their confidence and after six months he was granted access to the assets of the group. When the opportunity arose, he stole numerous items and goods worth 600 billion ISK, which is about 12.400 €.[5] These stolen credits can only be used in the game to buy items or even time to play longer. It is not possible to exchange them for real money. Now, the question is: Did the player act unfairly?

On the one hand, one might be willing to affirm the question due to the fact that the player got the money through a feint. On the other hand, he acted within the limits of the game world and did not violate any rules. If the mechanics and rules of the game enable the player to act this way, how could his actions be considered unfair? Maybe he defies other rules which are not code based or he simply does not behave correctly in the game. To answer these questions, it must be explained which ways of playing are declared as *unfair*. Creating an exhaustive list of all extant unfair play practices is beyond the scope of this paper, but canonical instances will be explicated in order to provide an outline of unfair play.

Cheating

Let us start with the most obvious one: *cheating*. Many players understand cheating only as *breaking the rules*.[6] But the definition of the term goes beyond this. To bend or to reinterpret the rules can also be seen as cheating. A cheating player always wants to get advantage over other players.[7] But what practices can be seen as cheating and when can one refer to them as *morally questionable*?

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5 Ritter, Tobias: "EVE ONLINE—Währung im Gegenwert von 13.000 US-Dollar gestohlen," in: *Onlinewelten*, March 04, 2015, http://www.onlinewelten.com/games/eve-online/news/waehrung-im-gegenwert-13-000-us-dollar-gestohlen-128146/

6 Consalvo, Mia: "Rule Sets, Cheating, and Magic Circles: Studying Games and Ethics," in: Petra Grimm/Rafael Capurro (eds.), *Computerspiele—Neue Herausforderungen für die Ethik?*, Stuttgart: Franz Steiner Verlag 2010, p. 27.

7 Spieler, Klaus: "Ethik der Computerspiele. Computerspiele in Kultur und Bildung," in: Stephan Günzel/Michael Liebe/Dieter Mersch (eds.), *DIGAREC Lectures 2008/09. Vorträge am Zentrum für Computerspielforschung mit Wissenschaftsforum der Deutschen Gamestage: Quo Vadis 2008 und 2009*, Potsdam: Potsdam University Press

Interpretations of cheating

There are a lot of ways to cheat in a videogame, therefore it is quite difficult to list them all. The use of game guides, watching walkthroughs, using cheat codes, exploiting bugs in the game code or using external programs for wallhacks, aimbots and so on should be mentioned.[8]

- Walkthroughs and game guides: If the player does not get further in the game because a task is too difficult, then he searches for support by reading or observing what the solution looks like.
- Cheat codes: The player uses certain codes to manipulate the programmed code of the game and to go beyond the rules. In most of the cases these are certain key sequences which one enters during the game. Thus, he can get particular game internal resources, become immortal or skip a level.[9]
- Bug-using: With this method software glitches are used in the game. Some of them offer the player certain advantages. For example, it is possible to get to a point in the map that is unreachable for other players (that do not know this bug).
- External programs: This includes diverse practices. Software, which does not belong to the game or rather which is external to the game, supports the player or the player himself edits the program on the code level. In this way, he is able to look through walls [wallhack] or he aims automatically [aimbot].[10]

2009, https://publishup.uni-potsdam.de/opus4-ubp/files/3591/digarec02_S084_092.pdf, p. 88; Consalvo, Mia: *Cheating. Gaining Advantage in Videogames,* Cambridge, Mass.: MIT Press 2007, p. 87.

8 Kücklich, Julian: "Homo Deludens—Cheating als methodisches Werkzeug in der Computerspielforschung," *Forum Computerphilologie,* May 20, 2007, http://computerphilologie.digital-humanities.de/jg06/kueck.html; Zierold, Kirsten: *Computerspielanalyse. Perspektivenstrukturen, Handlungsspielräume, moralische Implikationen,* Trier: WVT Wissenschaftlicher Verlag 2011, p. 253.

9 J. Kücklich: "Homo Deludens"; K. Zierold: *Computerspielanalyse,* p. 253.

10 Kimppa, Kai K./Bissett, Andrew K.: "The Ethical Significance of Cheating in Online Computer Games," in: Rafael Capurro et al. (eds.), *The Ethics of E-Game, International Review of Information Ethics,* 2005, http://www.i-r-i-e.net/inhalt/004/004_full.pdf, p. 35.

There is another way to annoy other players that often goes overlooked and occurs at LAN-games or games with a split screen mode. Is it morally reprehensible to look at the screen of the opponent to spy where he is in the game world? On the one hand, this can be seen as cheating. Since both players could have set up additional rules before the game starts which, among other things, state that it is not allowed to look at the screen of the opponent. If one of the players breaks this rule he acts morally wrong and unfair even if the other player does not notice it. On the other hand, looking at the other screen could be part of the game. Many games for the *PlayStation 3* are constructed as multiplayer offline games where you can compete against one another using the same screen. Why should it be prohibited to look at the other part of the screen? Nobody is at a disadvantage because everybody is able to spy on each other—unless one does not know the map like his opponent.

What is cheating?

Every player has his own opinion about cheating; respectively every player has his own position on which of the described practices can be considered as cheating. Mia Consalvo interviewed players about this topic and developed a spectrum with three important opinions about cheating.

First of all, there are the purists who deplore all of the above practices. They take the view that all actions can be seen as cheating which are not the result of your own abilities. If, for example, a player looks for help or assistance on the internet, he breaks no rules of the game but he does not play in the intended, 'usual' manner.[11] The moment of epiphany, when the player solves the task, respectively the puzzle, fails to emerge and as a result the game experience will be limited.[12]

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11 Another interesting question would be what the so-called *usual manner* is. Who defines the normal way to play a game? For example, is it normal to use a bazooka to move forward faster or to jump higher in a first-person shooter? If everything that belongs to the game world counts as the *usual manner*, the answer would be yes. It is a little bit tricky to find the definite answer since it depends on various definitions and interpretations, for instance using bugs in the game could count as *usual* if one believes that it is part of the game.

12 J. Kücklich: "Homo Deludens"; M. Consalvo: "Cheating," p. 88.

A second group refers to "cheat code, unlockables, and alterations of the game code itself."[13] In doing so they differentiate between codes which the developer created—so-called cheat codes—and codes that were developed by a player via external programs. Both are considered cheating by purists. For the second group, the use of game guides and walkthroughs is not problematic due to the fact that the programmed game code is not affected.[14]

For the last group, the manipulation of the game code is also relevant. Yet proponents of this group take the view that cheating is context-sensitive and thus happens only in relation to other players—"cheating is necessarily social (or antisocial)."[15] That is to say that a player is not a cheater as long as he uses game guides, walkthroughs or even aimbots, wallhacks or other external programs while he is playing alone and not with other players. Therefore, the distinction between single and multiplayer mode is central and will be further discussed in a later section.[16]

To put it in a nutshell: The question of the moral reprehensibility of cheating depends on the interpretation of the term. While the purist condemns using any external help (game guides), most players find the use of codes unacceptable—no matter if they are generated by the player himself (wallhacks) or by the developer. Especially in multiplayer games cheaters are accused of playing unfairly.

Camping

Players frequently criticize *camping* as an unfair way of playing. It is a tactical method (line of attack) in a videogame where the player stays at a strategic point on the map and liquidates his rivals from this spot with a strong weapon.[17] An extreme version of this is so-called *spawn-camping*. In this case the player waits at certain spots on the map where the opponents are known to spawn or respawn

13 Ibid., p. 90.

14 Ibid., pp. 90-91.

15 Ibid., p. 92.

16 Ibid., 91-92; Stoll, Alexander: *"Killerspiele" oder E-Sport? Funktionalität von Gewalt und die Rolle des Körpers in Multiplayer-Ego-Shootern*, Boizenburg: Verlag Werner Hülsbusch 2009, p. 105.

17 Smith, Jonas Heide: "Playing Dirty—understanding conflicts in multiplayer games," paper presented at the 5th annual conference of The Association of Internet Researchers, The University of Sussex: September 19-22, 2004, http://www.itu.dk/people/smith/texts/playing_dirty.pdf, p. 5.

into the game and kills them. These spawn points are predetermined and can be located quickly. Camping is typically allowed by the game. Nevertheless, it is considered unfair because it gives an advantage to a player that can strongly influence the dynamic of the game.

Ganking

Furthermore, *ganking* is an unfair way of playing. In this case, an experienced player kills a less versed player or even a beginner. Reynolds says: "Ganking is taken to be 'killing' that is unfair due to the lack of contest and asymmetry of power."[18] The newbie has no chance because the other player is more qualified and probably has better equipment in the game. In extreme cases, the unexperienced player is killed very often and in a short time with the result that he has little room to act, does not achieve any goal and quits the game.[19] This method does not break any rules and also, the beginner accepts that he might get killed when he joins a Player-versus-Player server. In spite of that, this kind of behavior is unfair because the experience of the player and the gameplay is affected negatively in a strong way.

Grieving

Grieving should serve as a further example and implicates diverse ways of unfair playing. This practice can be understood as causing harm to other players. One purposely spoils the other players' enjoyment of the game by this way of playing. The actual goals of the game are irrelevant for this kind of player because he only focuses on the grief of the other players. Jonas Heide Smith describes grieving as follows:

"The broad category of grief play includes player behavior which causes another player a severe, stressful disadvantage which is (usually) unrelated to the winning conditions of a game."[20]

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18 Reynolds, Ren: "Ethics and Practice in Virtual Worlds," in: John Richard Sageng/ Hallvard Fossheim/Tarjei Mandt Larsen (eds.), *The Philosophy of Computer Games*, Dordrecht: Springer 2012, p. 145.

19 Ibid.

20 J. H. Smith: "Playing Dirty," p. 6.

Imagine that a player participates in a team-deathmatch with the option of friendly fire. Instead of supporting his teammates and eliminating opposing players, he kills his own comrades and makes it harder for them to achieve the goal of the game. This example of *team-killing* is a good way to exemplify grieving. Another possible example would be *kill-stealing* where a certain player gets the points for a kill although another teammate should have earned them since he had done most of the work. Ganking also falls into the category of grieving.

Additional Rule Breaking

A *violation of rules*, which are set by the community, can also be considered as unfair. BATTLEFIELD 3[21] can serve as an example for this case. This videogame has an online multiplayer mode where one competes alone or with teammates against other players. There are various play-modes which you can choose and one of them is standard team-deathmatch. Before the agonal game starts, the loading screen shows some additional rules:

- No shotguns or shotgun-like devices should be used.[22]
- No camping!
- One should not take advantage of glitches.

If a player breaks any of these rules while the rest abides by them, he has an advantage. Now, there are two possible scenarios that can happen if one of the players does not adhere to the rules. First case, if one uses a shotgun, there is a chain reaction. All the additional rules are rescinded and other players use this kind of weapon too or break further away from the previously established rules. As a consequence, there is no unfair behavior because every player rejects the rules. However, it may also happen that the administrator bans the one who transgresses from a certain norm of the game. Whichever occurs depends on how rigorously the additional rules are upheld.

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21 BATTLEFIELD 3 (Electronic Arts 2011, ●: Digital Illusions CE)

22 Shotguns are relatively powerful weapons in BATTLEFIELD 3. This type of weapon has a huge spread and as a consequence the shooter is able to kill his opponents without a high level of skill. I.e. it is sufficient to shoot nearby another player to wound or even to kill him. Shotguns will offer a great advantage particularly on small maps. Therefore, the use of this kind of weapon is often forbidden.

Doping

A more recent dispute concerns *neuro-enhancement* during tournaments. This controversy was caused by a player named Semphis (Kory Friesen) who admitted during an interview to consuming Adderall.[23] This is a drug to enhance one's concentration. The problem of doping is rather an external one unlike all the described cases above. Despite the fact that the player is a part of the game, his body is located outside of the game world.

To say whether this kind of doping is unfair is not so clear. On the one side neuro-enhancement should be prohibited in e-sports since it offers a position of advantage over other players who do not dope themselves. On the other side, the more general debate concerning neuro-doping is at a relatively early stage and further developments in this issue should be awaited to see what standpoint in the controversy is reasonable and what exactly counts as a neuro-enhancement.

THE REFERENCE FRAMEWORK OF THE MULTIPLAYER-MODE

There is an important aspect that came up during the last section: Unfair behavior only occurs when several people play together. Therefore, the differentiation between single- and multiplayer is essential for the occurrence of unfairness. This fact can be illustrated with the aid of cheating.

If one plays a game in single player mode and offline the use of cheat codes makes the game easier for one thing, but it can also increase enjoyment. Using cheat codes makes the game easier by, for example, providing the player with limitless ammunition and health or allowing him to skip a level if he cannot complete it. But cheat codes may also offer the player the option to, for example, make the head of the avatar bigger or change the laws of physics of the game world. Depending on the game there are various cheat codes like these. However, in this context cheating is not considered problematic since the player only affects his own experience of playing. Spieler thinks: "For example, it cannot be

23 Maiberg, Emanuel: "Counter-Strike eSports Pro: 'We Were All on Adderall'," *MOTHERBOARD*, July 14, 2015, http://motherboard.vice.com/read/counter-strike-esports-pro-we-were-all-on-adderall

definitely assessed whether I use cheat codes in single player games due to ethical criteria."[24] Perhaps this could be categorized as self-deception by the player.

If one cheats in an online multiplayer game by using cheat codes and external programs, this can be seen as "a moral offence"[25] because the gameplay experience of other players is affected in a negative way.[26] In this instance Huizinga speaks about a killjoy.

"The player who trespasses against the rules or ignore them is a "spoil-sport". The spoil-sport [...] shatters the play-world itself. By withdrawing from the game, he reveals the reality and fragility of the play-world in which he had temporarily shut himself with others."[27]

The rules of the game are binding and must be accepted unconditionally by entering the game. With the use of cheat codes, one breaks the rules or at least one circumvents them. In light of the fact that the rules delimit the game world (indeed, they constitute it in the first place), a violation of them would be a destruction of the game world. Huizinga proposes that a killjoy should be debarred from the game and the game community.[28]

Imagine a player in a competition where he must kill his opponent in order to win. But his rival has activated the god-mode and due to this he is invincible. In this case, there is no equal opportunity. In a nutshell, it is no problem to cheat in single player mode. But if one competes with or against others, one is acting in an unfair manner. As soon as there is competition, fairness plays a role.

DIGITAL REGULATION

Now we come to the most important point. It was mentioned above that a player can be debarred from the game by the community or a higher authority once he

24 K. Spieler: *Ethik der Computerspiele*, p. 89 (own translation).

25 K. K. Kimppa/A. K. Bissett: *The Ethical Significance*, 32; Private gaming sessions of companioned players could be an exception.

26 J. Kücklich: "Homo Deludens."

27 Huizinga, Johan: "Homo Ludens. A Study of the Play-element in Culture," London: Routledge 1980, http://art.yale.edu/file_columns/0000/1474/homo_ludens_johan_huizinga_routledge_1949_.pdf, p. 11.

28 Ibid.

breaks any game specific rules and behaves unfairly. There is currently a discussion to extend this concept and to form an institution akin to *digital police*.[29] Such an institution would be in charge of inhibition of unfair behavior in games and is an interesting as well as significant project especially for online open world games. The videogame could be regulated in a game external as well as internal way.

Game external regulation could be some kind of facilitator who observes the game and sorts out the unfair players. This person wouldn't be part of the game in a direct way but he could intervene actively in the happenings of the game. A further but completely external sanction is a doping test. Before a tournament starts the players would be tested for any medication to enhance their concentration. It would be a preventive way to regulate the game.

More interesting is *game internal* regulation because there could be an institution which is formed by the players. Thus, players could say—within the game world—what should happen to the one who breaks a rule or the one who acts unfairly in another way.[30]

Which option should be preferred depends on several factors—for example, the size of the game map or the time restrictions. Thus, internal regulation is better for an online open world game without a certain time limit and many opportunities for action. External regulation is advisable for an online multiplayer first-person-shooter since the time limit of the match is to short and not sufficient to get together and decide what should happen to the player. This does not mean that a player who participated in the match could not do this.

PROBLEMS

There are a few problems that must be considered if digital regulation is to be established. For example, regulative participants of the game could be partisan. That means, a regulative person who joins a match should not ban another player because he gets an advantage in doing so. Therefore, there must be somebody who observes this person and then somebody who keeps an eye on this observ-

29 Schott, Dorn: "Wie weit sollen Spieler gehen dürfen?," *gamespilot*, March 27, 2015, http://www.gamespilot.de/news/wie-weit-sollen-spieler-gehen-durfen-146920?utm_campaign=wie-weit-sollen-spieler-gehen-durfen&utm_medium=post-moviepilot&utm_source=facebook

30 Ibid.

er—this would continue *ad infinitum*. Furthermore, it could be difficult to find an objective third party—regardless of whether it would be a participant or someone who controls the game from the outside. Who wants to observe and regulate games all day for a small payment or even no payment at all? Even if there are people who would do this job, a range of them would have be hired and that is not affordable—not yet. A much simpler solution to regulate and decide if a player should be banned would be a vote among the participants of the match. That way the risk of biased judgment/decision would be minimized.

Aside from that, the question of the concrete or rather correct punishment arises: The most typical one is suspension. But when should a player be debarred? What is the limit? Maybe to caution a player is enough. What about a punishment afterwards? What would this look like? An example for this case is to block the account of a user or, in extreme cases, the console can be suspended. But the only authorities that are in a position to do something like this are service providers. Xbox for instance has the *Xbox Live Enforcement-Team* that defends the conditions of use and the code of conduct and there is also the *Infinity Ward Online Services Team* for the CALL OF DUTY series.[31][32]

Also, it is fundamental for game regulation that one has the story of the game in mind. To kick a player out of the open world survival horror game DAYZ[33] because he stole items from another person would not be appropriate since the story takes place in a post-apocalyptic world.

In this context, another problem should be mentioned. At the beginning of the paper I said that only unfair actions that are inauthentic will be discussed and it is necessary to say that only this type of action should be regulated. To remain with the example, in DAYZ it is possible to handcuff other players and to hold them hostage. If a player is treated in an unfair manner because others torture him, it takes place in a narrative context. In this case, however, it would be unfair in an inauthentic way if the tortured player just quit the match and spawned in a different server.[34] It is very important to say that the *digital police* should

31 See "Xbox Live Policies on Console Suspensions," http://www.xbox.com/en-GB/consoleban

32 See "CALL OF DUTY: Ghosts Security and Enforcement Policy," https://support.activision.com/articles/FAQ/Call-of-Duty-Ghosts-Online-Code-of-Conduct#

33 DAYZ (Bohemia Interactive 2013, ○: Bohemia Interactive)

34 There is a little trick: You can disconnect the connection to the server and resume to play on another one. But watch out: If you are fettered, you are still fettered in the new session and probably you will die.

caution the tortured player (not the torturer) and if he repeatedly ignores warnings, he should be banned for a certain time. Similarly, in GTA V[35] one is declared a killjoy if one leaves a match before it ends. After doing so repeatedly he gets exiled to another world with all the other killjoys.

In summary: The *digital police* as an institution with the necessary resources would have the opportunity to caution or to punish but it should be decided carefully who the guilty or unfair players are. Additionally, the link to the story of the game has to be maintained since the player should not be disturbed in his game experience or more specifically the immersion of the player should not be destroyed.

CONCLUSION

The described cases of grieving, cheating etc. show that one who plays in an unfair way either wants to have an advantage over his opponents and his teammates or wants to harass and provoke them. To consider a certain way of playing as unfair is definitely subjective and so there are a lot of actions that have the potential to be regarded as unfair.[36] But the ethic of computer games has the opportunity to give a specific overview and it plays a part in contributing to create fixed and objective benchmarks or norms that can be used as an orientation during the regulation of these practices of playing. Even though this is a worthwhile task, the videogame ethic is in the early stages of development and there is a lot of work to be done.

To answer the initial questions: There is already some kind of digital regulation of video games but the discussion whether there should be such a thing does not really exist. I hold that a "digital police" is advisable in certain situations. Some players have to know how far they can go. To test boundaries is a part of the game but not in a way that other players feel harassed. Also, I think that a regulation has to be internal in most of the cases. Some kind of court like the tribunal in LEAGUE OF LEGENDS[37] or a police patrol in *DAYZ* is a good idea that can be developed further. External regulation should only be made in cases concerning cheating via cheat codes. The reason is that in most instances no player

35 GTA V (Rockstar Games 2013, ●: Rockstar North)

36 J. H. Smith: "Playing Dirty," p. 5.

37 LEAGUE OF LEGENDS (Riot Games 2009, ●: Riot Games)

is able to say if someone is cheating or is just very skilled.[38] At this point an external acting "digital police" that have the possibility to intervene immediately is appropriate. But the question how far they can go is still difficult to answer.

What about the camping noob-tuber from the beginning of the paper? Should he be kicked out? I would answer in the affirmative but only if he has broken one of the additional rules. If no extra rule is set up and nobody explicitly declares themselves against camping *before* the game starts, the noob should not be banned. Maybe there is another way to regulate his behavior. I have only scratched the surface of the possibilities of a digital regulation. There are many more aspects that have to be considered, for example the social type of regulation. A lot of games have certain forums where the communities can share their ideas, talk about a certain match or, and this is the interesting point, make an unfair acting player accountable for his way of playing. After all, I take the view that the discussion about the regulation of unfair behavior in video games should be more detailed, or, to be precise, the dispute about this issue should be taken to a scientific level.

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38 Ibid., p.8.

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Bodies That Matter in the Pursuit of Esports

EMMA WITKOWSKI

This study explores the practices and processes of embodiment in esports as it transitions into a professional culture of play.[1] As a practice of formally organized competitive computer game play, esports is in its third decade. Tournament play during the "golden years of arcades" (1978-1981)[2] saw sported themed games like ATARI FOOTBALL[3] and PONG[4] enticing local players to compete for a small prize purse and arcade fame. These early tournaments, promoted and documented in Atari's *Coin-Op Newsletters*, are a good reminder that esports has specific epochs and regional particulars, some of which are quickly shifting in this new era of game cultures—what some competitive gaming insiders have labeled as the golden age of esports.[5]

The period explored here starts just prior to the launch of Twitch, the dominant Western games livestreaming platform. As a key factor in the increased presence of esports as a professional practice and a spectator sport, Twitch plays a significant role in the increase in high performance user-generated content, the

1 Explanatory note: This article started as a presentation for the 2016 *Clash of Realities* conference. The article maintains the core arrangement, but has consolidated the themes discussed during the talk. Another version was presented at the conference.

2 http://www.gamasutra.com/view/feature/3766/atari_the_golden_years__a_.php? Print =1, accessed on August 21, 2008.

3 ATARI FOOTBALL (Ataric, Inc. 1978, ●: Atari, Inc.)

4 PONG (Atari 1972, ●: Allan Alcorn)

5 Kim Rom sets this period as between 2013—2015, where significant increases in spectatorship were documented. See Rom, Kim: *The Next Phase of Esports,* Paper presented at The Esports ●bserver meetup, Berlin 2016.

harnessing (and data performativity[6]) of esports spectators, and subsequent attention by traditional media sports industries. Twitch and other broadcast platforms (such as YouTube Gaming and Azubu) offer easy to access, deeply networked, production epicenters that participate in the steady distribution of high performance play. In Latourian terms, Twitch is a full-blown actor with the ability "to *make* other actors *do* unexpected things"[7](original emphasis).[8] While a suite of livestreaming actions such as managing or producing interface overlays and channel upkeep, organizing moderators, coordinating intersecting social media sites, and the production of play itself all feed the everyday work of an esports player or organization's practice: but the node of Twitch and the personalized and networked channel itself participates in the production, traceability, and reach of a professionalized career.

In the following, some of the ongoing tensions involved for players maneuvering in the current, somewhat turbulent, state of esports as a rapidly developing media sport are explored. Of particular interest are the shifts in sociomaterial structures and high performance players' embodied experiences made between 2010 and 2016, as esports player communities moved into new configurations and power relationships of networked publics. danah boyd renders networked publics as how "publics [are] restructured by networked technologies" as persistent and archived communication which is scalable, easy to discover and join and, most importantly for this study, networked publics involve collapsed contexts.[9] Esports administrators and industry insiders speaking about the golden age of esports often overlook the importance of this decisive point regarding the fitness of their business models: the collapsed contexts of esports, as a networked performative landscape, regularly places increased professional burdens on the bodies of the players themselves, while simultaneously doing work to

6 Spectator data, visualized on every Twitch channel in as up-to-date numbers (such as "watching now" numbers, and "total views"), are also a spectated part of the Twitch interface. The numbers are significant to the individual channel and platform storytelling of the success of esports content as a spectator sport.

7 Latour, Bruno: *Reassembling the Social: An Introduction to Actor-Network-Theory*, New York: Oxford University Press 2005, p. 129.

8 Humans and nonhuman actors "do things"—they are transformative, not placeholders: B. Latour: *Reassembling*, p. 154.

9 Boyd, Danah: "Social Network Sites as Networked Publics: Affordances, Dynamics and Implications," in: Zizi Papacharissi (ed.), *A Networked Self: Identity, Community and Culture on Social Network Sites*, New York: Routledge 2010, p. 50.

distance players from deeper relationships with their nearest expert network—other players.[10]

Before moving into core issues impacting on bodies that matter in esports, it must be noted that the purported golden age places Western esports platforms and practices at its center. Jin,[11] Chung,[12] Taylor,[13] and Szablewicz[14] all offer significant explorations on the rise of esports as a networked media sport in Asia, from China to South Korea. South Korea was the first nation to hone a dominant esports culture, and for over 15 years esports has permeated mainstream media and the national cultural landscape from dedicated TV channels to long-term state recognition of esports as a sport. This exploration, as such, offers a view from Western platforms and practices still in-the-making, and often ineffective, in the move from serious leisure practice to professionalized sport with reference to the successes and failures of diverse Asian esports cultures and organizational practices.

The fieldwork of this study comprises of observations, interviews, and secondary documentation across several mega-LAN events. These events include DreamHack (Jönköping, Sweden in 2009, 2011 and 2016), LEAGUE OF LEGENDS[15] finals (2014 World Championships held in Seoul, South Korea and the 2015 Oceanic Pro League finals held in Sydney, Australia), BlizzCon (2010 Los Angeles, USA), The World Cyber Games (2010 Los Angeles, USA) and Major League Gaming tournaments (2010 Washington DC, USA). The games observed

10 Attention to the rights of players has been ongoing in the work of organized unions, national associations (in creating codes of conduct and providing mentorship to emerging esports players, and grassroots collective bargaining actions). See: Lewis, Richard: "E-sports Team Union Formalises and Reveals Demands For 2016," in: *E-Frag* (2015).

11 Jin, Dal Yong: *Korea's Online Gaming Empire*, Cambridge, Mass.: The MIT Press 2010.

12 Chung, Peichi: "New Media for Social Change: The Online Gaming Industries in South Korea and Singapore," in: Venni V. Krishna (ed.), *Journal of Science, Technology and Society* 13, Thousand Oaks, CA: Sage Publishing 2008.

13 Taylor, T. L.: *Raising the Stakes: The Rise of Professional Computer Gaming*, Cambridge, Mass.: The MIT Press 2012.

14 Szablewicz, Marcella: "A Realm of Mere Representation? 'Live' E-Sports Spectacles and the Crafting of China's Digital Gaming Image," in: Krzywinska, Tanya (ed.), *Games and Culture* 11, Thousand Oaks: Sage Publishing 2008.

15 LEAGUE OF LEGENDS (Riot Games 2009, O: Riot Games)

and interviewed player/organizers span first-person shooter team games (like COUNTER-STRIKE[16]), to MOBAs,[17] RTS[18] and fighting games.[19] From 2011, observations and interviews were extended to high performance player broadcasters on Twitch, as players and teams shifted their practices towards regular and self-managed networked high performance practices. Team and player Twitter feeds, dedicated team, organization, game and tournament forums, Reddit AMA's ("Ask Me Anything"), alongside of the secondary documentation (player and institutional interviews) are significant resources in this study, drawing together the many perspectives and communicated practices of career esports participants.[20] As public personalities and historic figures, the players and organizations in this study are not placed under pseudonym unless sensitive material has been performed or discussed.

ON ESPORTS AND MEDIA SPORTS

What I talk about when I talk about esports often starts with the everyday sociophenomenological practices. These include (mostly) organized, regular training or play sessions with physically engaging, networked computer game competition (seasons, tournaments, and ladders). It is important to note that regional esports are not essentially alike. A single tournament scene, such as Major League Gaming (MLG), will play host to demographically discrete player and spectator bases (See Figure 1). Distinct pockets of participants might seem to center around game titles, but player/fans are just as importantly rendered by access to hardware (such as console type or PC), everyday affordances to participate in single-player or team-play expertise, dominant community character, sponsorships, franchise "value," near tournament opportunities, and routine expert practices.[21]

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16 COUNTER-STRIKE (Valve Corporation)

17 Multiplayer Online Battle Arena's, such as LEAGUE OF LEGENDS.

18 Real-Time Strategy games like STARCRAFT 2.

19 STREET FIGHTER in particular.

20 Law, John: *After Method: Mess in Social Science Research,* New York: Routledge 2004, p. 69.

21 Taylor, Nicholas: "Power Play: Digital Gaming Goes Pro," unpublished PhD dissertation, Toronto 2009; Harper, Todd: *The Culture of Digital Fighting Games: Performance and Practice*, New York: Routledge 2014; Witkowski, Emma: "Inside the

Figure 1: Dreamhack 2016--STREET FIGHTER V (Capcom 2016, ©: Capcom and Dimps), part of the Capcom Pro Tour, sponsored by Capcom (game developer) for $15,000 with low-production quality (top). And COUNTER-STRIKE: GLOBAL OFFENSIVE (CS: GO; Valve Corporation 2012, ©: Hidden Path Entertainment and Valve Corporation). Major tournament (bottom), sponsored by Zowie (media hardware company) for $100,000, with media sports production quality, and options for international broadcast.

Source: Emma Witkowski

Huddle: The Phenomenology and Sociology of Team Play in Networked Computer Games," unpublished PhD dissertation, Copenhagen 2012.

Everyday context-specific play is often revealing of the hurdles that players meet in sustaining their practice as either their main leisure involvement, or intended as a career practice. Where career practice can involve moving beyond the role of player and into other positions like coaching, management or production. Exploring these practices means looking beyond the glossy mega-spectacle of esports (performance and production) and hearing about the pipelines towards high performance play—such as observing where and listening to how the "B-team" is cultivating their practice—and watching the shifting institutional involvements from amateur grassroots communities to commercial and state interests/practices. These multifaceted practices are, perhaps not surprisingly, revealed as deeply complex both independently and in terms of the networked practices and impacts of esports as relational ecologies. Within these ecologies, Pro/Am[22] players are regularly acting as the fulcrum between new policies and ongoing practices—bearing the pressures of increasing complexity within esports as the practice continues to cultivate different organizational branches and shifting arrangements of governance as media sports.

The framing of esports as media sports is focused on the very top level of expertise and production. Lawrence Wenner's work on the subject critically explores this fusion between sports and communication, and in this regard, media sports see traditional sports institutions coming together and being made between the sport, the various (networked) texts, and (local and online) audiences.[23] Maguire et al extends this position, adding that media sports are events and franchises that only exist if there is "profit maximization" from media investments.[24] The site of esports mega-events lucidly captures this view of media sports, as developers use tournaments as a valuable marketing and brand investment tool or as mechanisms to extend the wealth created from a game title, through game purchase (and investment in franchises), microtransactions, and extended community involvement. Though, only a few major league and tournament organizers have claimed bonanza-like profits from such events,[25] most

22 Pro/Am designates a mix of professional and amateur competition or actors involved in supporting a practice such as an esports event.

23 Wenner, Lawrence A.: *Mediasport,* London: Routledge 1998.

24 Maguire, Joseph: *Sport Worlds: A Sociological Perspective,* Champaign: Human Kinetics 2002.

25 Riot Games has noted that its various esports leagues run at a loss. See Segal, David: "Behind League of Legends, E-Sports's Main Attraction," in: *New York Times,* October 10, 2014.

often evidenced in the sale of rights to the production or spectacle itself. In 2016, the MLG sold their broadcast rights for $US46 million to Activision Blizzard/Disney, while Twitch was purchased in 2014 by Amazon for $US970 million. The stakes and profit maximization in esports as an emerging sports scene are clearly very high.

There are drastic shifts happening across many esports scenes, with an increasingly professionalized industry growing with legacy media presence. In the following vignette, another historic orientation towards esports bodies in play is provided, one just prior to the launch of Twitch (though livestreaming was a part of various scenes),[26] and undulating with relationships, online and co-present, between core esports actors, and closeness beyond organizationally defined teams. The scene in question is WORLD OF WARCRAFT—Arena Tournament[27], Blizzard's Entertainment's 3v3 player-versus-player arena PC game. And while all local game scenes have their own cultures,[28] this fieldwork excerpt offers a snapshot of the specific socio-material orientations of the time which contributed to the practice and sustainability of everyday Pro/Am play.

WORLD OF WARCRAFT ARENA TOURNAMENT: AN ESPORTS VIGNETTE FROM 2010

To lead off, we might want to recall that high performance players were already engaging in their own ways towards professionalism and honing expertise across tournament scenes "pre-Twitch". Much of the work happening at the time was deeply relational—cultivated between players, developers/administrators, and high performance communities, drawing on various kinds of economic, gaming, and influencer capital[29] to maintain a culture of high performance play.

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26 T. L. Taylor: "Raising the Stakes"; E. Witkowski: "Inside the Huddle," p.129, p.174.

27 WORLD OF WARCRAFT (Blizzard Entertainment 2004, ●: Blizzard Entertainment)

28 See work on the MLG *Halo* scene in N. Taylor: "Power Play."

29 Where esports influencer capital is a hybrid of gaming capital (insider-game knowledge and expertise (see Consalvo, Mia: *Cheating*, Cambridge, Mass.: MIT Press 2007, pp.3-5), and more traditional form of social media influencer's, who accumulate a large online following and engage with followers/fans across multiple online/offline spaces while monetizing their following through the integration of commercial products in their platform/performance (see Abidin, Crystal: "#In$tagLam: Instagram as a Repository of Taste, a Brimming Marketplace, a War of Eyeballs," in: Marsha Ber-

In 2010, the MLG (Major League Gaming) was the major esports tournament scene in North America, and it looked quite different to the spectacle of today's many mega-events, including its own modern incarnation. Nick Taylor's longitudinal work on esports "audiencing" techniques within this timeframe does an excellent job of showing the social-material orientations that have shifted during this golden age of the MLG.[30] Taylor speaks of what specific material shifts means for the on-the-ground cultures of player/spectator engagement.[31] What he sees is a greater divide between audience and spectators in the room (while online relationships are constructed as "closer"). I would add that we're also seeing a greater material shift, and as a result social divide, between the players and the teams on the floor itself.

This is evident in the distinct scene and relationships formed on the 2010 *WoW* Arena scene. In the figure below (See Figure 2), I'm taking the photo from behind a low-fenced in field of play: and I'm one of the very few who doesn't have a connection to someone to be able to walk into the "players space".[32] At this time, there was a certain closeness across the various expert makers of play on this scene. Referees were former players, the Blizzard esports team was on first name basis with most participants, and "B-team" players[33] were present in wild-card slots, and invested player-fans were near (and chatty) spectators at the tournament. Rather than being siloed off into role-groups and spaces, this particular expert ecosystem had relationships being developed and maintained both vertically across key esports roles and horizontally through a peer-to-peer support group maintained by humans and nonhuman networks.

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ryMax Schleser (eds.), *Mobile Media Making in the Age of Smartphones*, New York: Palgrave Pivot 2014.

30 Taylor, Nicholas: "Now You're Playing with Audience Power: The Work of Watching Games", in: Brookey, Rob (ed.), *Critical Studies in Media Communication* 33, Abingdon: Taylor & Francis 2016.

31 Most notably, he sees the packaged-up streaming of mega-events as a key factor, where online viewers experience the local audience as a produced and smoothly staged part of the hyped-up broadcast package.

32 To the extent that a start-up esports franchise videographer livestreaming the event came up to me within 15 minutes of hanging around the barriers and asked who I was.

33 Unlike the other teams, B-team players were not affiliated to a franchise, received no remuneration from an organization or sponsor (such as plane tickets or accommodation) other than the chance of winning a part of the tournament purse.

Figure 2: MLG2010, Washington DC.

Source: Emma Witkowski

When considering how these spatio-temporal arrangements influence player-industry-audience relationships, some interesting points arise. Players talked here. They had relaxed conversational relationships and trusted (and constructively engaged with) the officials. They called on Blizzard employees regarding game issues that would affect their expert play (such as network issues, patch release dates, and "nerfed" characters[34]). And players were regularly observed assisting their near rivals—fixing non-English speaking teams local configurations for them at championship events.

Though, this scene wasn't always flourishing, all the time. There were certainly provocative personalities on the scene, and distance between players was bolstered by language, cultural differences, and game server choices. But the scene also facilitated a possibility space, cultivating the possibility for actions and experiences beyond winning, and an opportunity to foster other kinds of relationships within high performance play. That potential for action, made through the particular socio-material framing of tournament scenes, fortified

34 Nerfing refers to alterations in the system or rules to render an in-game item less effective.

some of the processual work these actors had already achieved across in-game and third-party sites.

Figure 3: WORLD OF WARCRAFT ARENA *players, at the 2010 Washington DC MLG tournament, gathered around a screen, discussing how to deal with lag for fair-play.*

Source: Emma Witkowski

If we were to only look at the North American players on the scene, all of them played on the same west coast *WoW* PvP server, despite bad ping for those logging in from the east coast. Players were all signed into the same mega PvP-guild, which meant they played pick-up games regularly with others, not just their pro-franchise teammates. With the added layer of a regular tournament meetup (MLG and BlizzCon), with their somewhat slow tempo's and open-plan spatial structures, other things happened. Players shared knowledge—competitors were observed talking about tournament lag and how to fix it with everyone's input in order that there was a fair playing field (See Figure 3). They loaned keyboards across teams, despite it enabling a rival to participate. And they hung out with all the pleasures and awkwardness that comes with being face-to-face with acquaintances for an entire weekend. While these experiential

layers built into the foundations of their interpersonal and interplay[35] relationships, the scene also showed how players were already focused on cultivating their online, player-as-spectacle persona. Two separate examples of trash-talking highlight the closeness of the scene at the time, and the attention players were giving to building an online audience.

TRASH-TALKING AND THE SPECTACLE OF PLAY

While these two examples draw from a time prior to Twitch, both were live-streamed events, as were all major 2010 WORLD OF WARCRAFT (*WoW*) Arena tournaments. And with 11 million subscribers[36] in *WoW*, the viewership potential in 2010 was at its peak potential. As far back as 2008, we can find *WoW* tournament players trash-talking for the sake of the online audience. When Hafu held up a handwritten sign with "Hi Godfather" to the video camera filming the event, she was stirring her former teammate (Godfather had left the team prior to the tournament), while also sharing juicy "insider" details of high performance player relations with the audience. This is direct, insider, and light-hearted trash-talking, but it informs us that players were already playing towards their networked publics far prior to big viewership numbers and curated Twitch channels.

The second example of trash-talking is more revealing of the closeness of players on the 2010 scene. In the final match of an MLG event, the two remaining teams were essentially playing in an empty convention hall (*WoW* tournaments nearly always ran over time). What happened on the scene (and live-stream) in this game is a fascinating moment where the performance of player relations is altered along the lines of new orientations to audience and socio-material space. During this game, one of the team captains started directing heavy verbal abuse at the other team, which was experienced as a completely new aspect of his play for those involved. For the online spectator, you heard the audio go from mundane tactical calls and murmurs of positional information to an abrupt change in tone, with the captain yelling loud and clear "Kill this fuck-

35 Where interplay is the labor of and between opponents, technologies, and the lattice work of things or auxiliary actors in flux together—it includes all the things which act on and formulate networked team play (See E. Witkowski: "Inside the Huddle," p.54).

36 While 11 million players seems paltry in 2017, in 2010 this was considered a sizeable player base.

ing idiot!" His sudden performance of the "bad boy/bad sport" through confrontational behavior and aggressive body gestures were in earshot of other players (sitting directly across from him), but most importantly, clearly captured by the audio and player profile camera close-ups.

Many players expressed their surprise in these new gestures of bravado by the team captain. To them, as players with deeply networked connections to one another, this performance of rivalry, in this format, was deeply unfamiliar. The bad sport, it turns out, had just signed a new deal, with a media agency looking to be the premier webhost for *WoW* PvP esports broadcasts. But it was also a time when the regular pro MLG scene was starting to crumble. With the MLG pulling WoW Arena from its circuit mid-year, leaving very few opportunities to cultivate local high performance tournament competition, and a decent pay check. The players everyday work in their networked public informed of the falseness, or rather performativity of this act. But, what this example also reveals is how new figurations of networked publics are significantly changing player performances. The captain reveals to us an extreme end: possible outcomes for players experiencing an abrupt change to their everyday practice (and identity), and resultant adaptation possibilities existing for those looking to maintain a career in esports. This particular "bad sport" pre-empted a current trend, where online game broadcasters hook viewers by working a recognizable, and abrasive or provocative, esports "entertainment" personality. As Goldhaber reminds us, "In a full-fledged attention economy the goal is simply to get either enough attention or as much as possible".[37]

This shift in orientation, more noticeable on the WoW Arena scene post-2011, speaks to a direct change in goals by these actors. Sigmund Loland speaks on the relationships fostered through "informal fair-play," where competitors, officials, and the game rules are attended to together to keep the fitness of fair-play and the "good game" in good health.[38] The significant socio-material alterations to esports scenes, with a focus towards tightly organized scenes and networked spectators, shifts with it those on-the floor relationships, and how high performance player cultures are achieved and maintained across multiple forms of closeness in play.

37 Goldhaber, Michael H.: "The Attention Economy and the Net," in: *First Monday* 2 (1997).

38 Loland, Sigmund: *FairPlay in Sport: A Moral Norm System,* New York: Routledge 2002.

These kinds of narratives, highlighting shifts in player power and players continuing work as expert architects of esports scenes, are seldom at the core of industry dialogues on the golden age of esports. Rather, easy to grasp infographics splash big numbers about which speak to the spectacle itself—biggest prize-purse size, most unique spectator numbers, more viewers than traditional sports broadcasts![39]—and leave the ever-changing immaterial and everyday cultural work of players as an aside. While players from the "pre-Twitch era" also experience the benefits and bargaining power of enhanced and centralized spectatorship channels and big stats (which have assisted in structural changes like North America's athlete visa for esports participants), the confidence in big numbers, as telling of the growth and health of esports as an industry, downplays and even sidelines how player communities have defined some of the terms and provide nuance to esports as a practice: cultural work they continue to engage in to this day.[40] I leave this annotated vignette here as a reminder of the slow, nuanced relational work done by players across sites of their chosen esports scene, and of the importance of socio-spatial arrangements as well as career orientations towards a sporting practice.

The final paragraphs are dedicated to three core provocations currently taking place within the golden age of esports, and impacting on player bodies. While each theme is fragmentary and ongoing across esports as media sports cultures, these situations present a view of the growing and persistent meshwork of body pressures for those who produce expert play itself, and as such each

39 The numbers are of course staggering. I was a stadium ticket holder at the 2014 LEAGUE OF LEGENDS World Championships held at the Seoul Football Stadium in South Korea. That single event was streamed live by 40 broadcast partners, and cast in 19 languages. The grand final was watched by 27 million people, with concurrent viewership peaking at over 11 million viewers.

40 While player-owned teams like Astralis (CS) offer a successful model of continued player-first involvement, this model is the exception not the rule. Astralis developed an alternative model for esports teams. Their team is a player-owned franchise (backed by investment capital). The original players derive a set salary on top of company shares. With this model, we see a different stance towards team ownership ethics, where there is transparency around the company's net value, and clarity on the conditions of the players' participation. Astralis shows us how players matter in their model. And how there can be a mode of push-back on mainstream media sports models of professional play.

layer warrants further attention regarding player welfare within this fast-developing media sports industry.

FROM GRASSROOTS TO BUSINESS SUITS

In this moment, where several esports scenes are transitioning into the fold of mainstream sports with the elusive promise of (rookie or entry-level) "pro-athlete" wages, many actors within these professional esports communities are voicing genuine hesitation towards the encroachment of "non-esports actors"—often derogatorily called "suits"—participating in the cultivation and direction of esports scenes themselves. There are historically charged apprehensions involved with "suits" and "traditional sports administrators" around the pastoral care (or disregard) of the elite level community[41] as well as towards career player sustainability issues, such as the support of transitional roles (like coaches) and marketplace flexibility—where players are not tied to a single market and as such can cultivate their personal brand via livestreaming.

The sudden rise and fall of the Championship Gaming Series (CGS), well documented by TL Taylor,[42] saw for example two high performance COUNTER-STRIKE communities (experts in different versions of the series) in disarray after the abrupt dismantling of the legacy media backed league. Without sustainability in mind, the CGS changed the landscape of many esports scenes by way of bloated paychecks, inattention to grassroots (feeder) scenes, and limited exclusivity rights. On folding, players and teams were left discouraged and with few alternatives for professionally organized high performance competition. The sudden professionalization and commercial patronage from legacy broadcasting and media sports lifted the career potential for the few, but the many grassroots esports scenes were not an organic part of the restructuring of elite level play.

41 COUNTER-STRIKE: GLOBAL OFFENSIVE pro-player "Hiko," a player selected to represent his peers in a newly formed league, offers an instance of how players are sidelined within emerging esports industries. Tweeting to Noah Whinston, the 22-year old CEO of team Immortals, who representing on the Professional Esports Association player relations committee: @hiko—"Player Relations committee"—how do we, as players, know nothing about this? We voted on 2 committees (Rules / Grievance)". See https://twitter.com/Hiko/status/812374560234467328.

42 T. L. Taylor: *Raising the Stakes*.

While legacy broadcasting and media sports are increasingly looking for deeper involvement in esports, there is also a continued push from regional esports associations/federations to establish themselves as a representative body. In some regions, there are clear gains for players coming out of the work and lobbying of national organizations. For example, in 2016 the French government acknowledged esports as a recognized career and have altered their Numeric Law which will shift esports out of its current placement under stringent gambling regulations. Though many locally formed esports associations are formed by current or former insiders—long-time fans with a passion for their game. And while many intentions and outcomes are deemed as positive for career player lives, there is still an issue of context collapse that encroaches on player bodies.

As a conversation with a professional esports manager of a highly successful team revealed, the complexities of having additional layers of governance involved was experienced as onerous for players and teams, in particular the demand for players to give more time to national initiatives on top of their already heavy schedules. "Playing for honor" is a pressure already being placed on player bodies by the "passionate amateurs" of national associations. With many national associations and federations voicing their value is, in part, in lobbying for esports as an Olympic event, the next three years will likely see this pressure increase. And while this particular team spokesperson acknowledged the benefits to national grassroots esports initiatives that were occurring through these associations, they positioned the majority of these actors as self-selected administrators,[43] with little esports gaming capital or traditional legacy media sports power to be able to enact real support towards player welfare. From the players' perspective, the ever-increasing governance from teams, organizations, developers, national associations, and federations represents additional layers of "middle-management," fiddling with the rhythms of "their" scene of play, and ultimately demanding the vigilant attention of players' in order that unprofessional maneuvers, characters, and systems are held at bay.

From grassroot actors looking to support their competitive game scene to more aggressive institutional professionals working to corner aspects of regional and economically fit markets—the intensity and persistence of negotiations for player bodies continues to surface the tensions and player welfare issues in-

43 Many national associations are or have previously been administered by self-selected actors (some valued by their communities, others more polemic), and professional teams and high performance players remain at odds with their role and position within the broader industry.

volved for those doing the performance itself, and providing the expert content to watch.

LIVESTREAMING AS PLAYER POWER

For some, the increased focus on livestreaming has provided an opportunity to personally curate and monetize their weekly routines as a high-performance player. Despite esports longer history as an industry undergoing professionalization, player wage stability is often found wanting: as one esports major league COUNTER-STRIKE player noted, "we never got paid [by our organization] on time once". The regular wage provided to effective streamers (with spectators monetized from ad-revenues to direct donations[44]) is one of the rarer economic rhythms available to some high-performance players. In this light, high performance livestreaming cultures have tilted favorably for many players. Former esports stars like *Voyboy* and *itshafu* (Hafu) have moved nearly entirely away from dependence on formally organized esports scenes. Hafu's transition to her brand as a stand-alone product is a neat example of Goldhaber's future forecasting on online attention economies,[45] where he predicted that "Individual attention getters of all sorts will find it ever easier to get attention directly through the Web, without any corporate packaging necessary." While a handful of former esports stars maintain their career independently as high performance game broadcasters, for the main body of competitive (tournament or league) esports players, their livestreaming channels are just an additional process (independent or as a contractual franchise obligation) appendaged onto in their weekly practice.

LEAGUE OF LEGENDS, one of the more centralized (developer operated) pillars of mega-tournament esports, has seen its players heavily managed on their personal livestreams. In 2013, a contractual clause restricted LEAGUE OF LEGENDS Championship Series competitors from livestreaming other games during their personal broadcast. Riot's director of esports, Whalen "RiotMagus" Rozelle, explained this exclusivity as a necessary evil in ensuring esports grow as a "legitimate" and "true professional" sport, noting that "In the past, pro gam-

44 Former high performance STARCRAFT 2 player Steve "Destiny" Bonnell talks through his livestreaming economic streams here: http://www.dailydot.com/esports/twitch-streaming-money-careers-destiny/.

45 M. H. Goldhaber: *Attention Economy*.

ers only had to worry about their personal brands when streaming and, at most, may have had to worry about not using the wrong brand of keyboard to keep their sponsor happy. Now, however, these guys are professionals contracted to a professional sports league. When they're streaming to 50,000 fans, they're also representing the sport itself."[46] As a secondary (for some primary) revenue stream, the personal broadcast contract restrictions (tied to the developer stranglehold on major tournaments as a centralized product) revealed a gauche disregard for player career sustainability. And furthermore, a disregard for the everyday work involved in cultivating an engaging broadcast persona on their livestream (resulting in 50,000 fans), through a mix of play across esports and popular games, from carefree gameplay to skilled practice.

A more recent encounter between players, teams, organizations, and a representative association within COUNTER-STRIKE saw players from five teams collectively organize and eventually scuttle a move from a well-watched and recognized *CS*-league (The ESL Pro League) to a newly formed North American run *CS*-league (The Professional Esports Association). Players stated, "In a profession where so much of your income depends on your performance and brand exposure, being able to choose where you play is vital."[47] This statement compounds the current position for many players, as independent brands with the playing and persona potential to self-maintain a high performance playing career outside of the corporate packaging. Independent or contractual esports livestreaming highlights just one area of regular participation for many career high performance players. This additional layer of professional practice reveals some of the burdens and changing power relationships in the construction and management of high performance play, where player bodies are deeply networked as producers of expert play and influencers around games as desirable products.

46 https://www.reddit.com/r/leagueoflegends/comments/1s38ea/lcs_2014_ contract_stipulates_players_cannot/cdtp3xj/

47 https://medium.com/@sirscootscs/an-open-letter-to-the-professional-esports-association-its-member-teams-and-the-counter-strike-db2fb8b55f75

STRUGGLES WITH TRADITIONAL MEDIA SPORTS PATRONAGE

2016 was a stand-out year for legacy media and traditional media sports patronage in esports. Media corporations (such as the Time Warner group who runs the ELeague) have heightened interest in getting into the esports market (or rather reignited interest),[48] looking to add value to their existing brands and maintain their relevance for youth cultures: primarily by supporting, financially and through brand capital, esports scenes as a method to extend their own product with the main demographic of esports consumers, young men.[49] Many individual esports players have influencer status (over 5000 regular viewers/followers) on networked social media sites and livestreams,[50] while formal industry/organizer tournament events can harness spectators in the millions for a single event. The capacity to orient this specific demographic is highly valued in the online attention economy or as Crystal Abidin curtly phrases it, the business of drawing attention becomes a "war of [and for millennial] eyeballs".[51]

As such, the sudden grab after FIFA[52] esports players and teams by traditional sports club prompts many questions about the role of the esports player within existing sports media complexes. Historic football clubs including West Ham United, Ajax FC, and Valencia all procured esports player/teams in 2016, with 13 football clubs in all swiftly moving into the esports marketplace.[53] This patronage can mean a regular wage for esports players, alongside of social status

48 T. L. Taylor: *Raising the Stakes.*

49 *Deloitte report: Technology, Media and Telecommunications Predictions 2016*, see: https://www2.deloitte.com/au/en/pages/technology-media-and-telecommunications/articles/tmt-predictions-2016.html

50 Popular esports streamers regularly have high four-figure viewer numbers on their Twitch streams, networked with five-figure follower digits on affiliated social media sites like Twitter, Facebook and YouTube. As a former esports pro-player, Voyboy (streaming LEAGUE OF LEGENDS) still draws in 6,000 concurrent viewers to his broadcast.

51 C. Abidin: *#InStagLam.*

52 FIFA (Electronic Arts 1993, ●: EA Sports)

53 The traditional sports football clubs involved in the 2016 move towards FIFA esports include: Paris Saint-Germain, Ajax FC, PSV Eindhoven, Sporting Portugal, Manchester City, FC Schalke, Wolfsburg, West Ham Utd, Valencia, Bestiktas, Baskonia, Santos, and FC Volga.

and external recognition of esports as "aligned" with and endorsed by traditional sports, not to mention the powerful backing of a traditional club and its professional infrastructure. Sports sociologists have however been critically engaged with the complexities and controversies in association football and emerging and established commercial leagues before PONG existed, and there's plenty at stake for esports players diving head first into this traditional sports space.[54] Perhaps the most basic question sits with how traditional sports organizations engage with esports players as legitimate sportspersons.

The question of "are esports sports" has been floated for at least two decades,[55] and continues to be raised in emerging esports markets (such as Australia). Esports communities have had years of experience in both defending and moving beyond the "sports" label designating their practice.[56] In his journalistic coverage of the North American COUNTER-STRIKE scene, Michael Kane highlights the sporting metaphors deployed by organizations and attention to athletic prowess (hand-eye coordination, teamwork familiar to ice-hockey and basketball) noted as imperative to be a top esports player.[57] In 2010, players readily informed me how they avoided telling their school friends of their dedicated involvement in esports to avoid everyday mocking of their passion. Parents were often cast as deeply suspicious of this digital sports-like engagement, right up until the first cheque rolled in. Most esports players can recap stories of defending their sport as a form, and as an embodied and meaningful corporeal experience. In terms of deeming esports as sporty, perhaps some of the most denigrating statements have in fact come from the now supportive circles—traditional sports. In 2008, IOC president Jaques Rogge suggested that playing videogames

54 Connor, James: "The Athlete as Widget: How Exploitation Explains Elite Sport," in: *Sport in Society* 12 (2009); J. Maguire: *Sport Worlds;* Walsh, Adrian/Giulianotti, Richard: *Ethics, Money and Sport*, London: Routledge 2007; L. A. Wenner: *Mediasport*; Wenner, Lawrence A.: "On the Limits of the New and the Lasting Power of the Mediasport Interpellation," in: *Television & New Media* 15 (2014), pp.732-740.

55 T. L. Taylor: *Raising the Stakes*; Witkowski, Emma: "On the Digital Playing Field: How We 'Do Sport'with Networked Computer Games", in: *Games and Culture* 7 (2012).

56 The label of esports was discussed at the 2008 esports industry conference held in Cologne, Germany with multiple insider noting that esports became the used term, rather than say "e-competitions," as "sports" worked fluidly and comprehensibly across more languages.

57 Kane, Michael: *Game Boys*, New York: Viking 2008.

simply didn't have the "stuff" of traditional sports, stating "You won't hear me saying sport is not fun—it is. But it requires austerity and discipline. The answer is achievement. You will never achieve in a videogame. It is not really success".[58] Legacy sports media, in the form of North American major sports channel ESPN, also presented a maligned interpretation of the form of esports writ large, with president John Skipper announcing "It's not a sport—it's a competition. Chess is a competition. Checkers is a competition. Mostly, I'm interested in doing real sports".[59] The questioning of the real sporting body, and whether esports are "real sports" leaves traces behind on the players who take the everyday battles for their sporting performance and do the bulk of the immaterial and affective work that keeps their scene plump as an expert practice.[60] Esports players in North America, TL Taylor has noticed, are becoming less concerned in defending their status and practice within sporting metaphors, having reached a place and status where the practice of esports encapsulates value in its own definition.[61] Though with these new traditional sports club alignments, entrenched with their own brand of association football baggage, I tend to wonder what kind of maneuverability and status esports players will be working with in the day to day. Has the "jocks" versus "nerds" rhetoric really died? In the boardroom, are esports FIFA players recognized for their football prowess or framed as "second tier" "football players"? Where does the "B-team" fit into this siloed system, and how do they receive mentorship and cultivate expert relationships under the marketing framework of patronage? And where to begin with questions of diver-

58 http://www.timesonline.co.uk/tol/sport/olympics/london_2012/article3980955.ece, accessed on May 22, 2008.

59 Chmielewski, Dawn: "Sorry, Twitch: ESPN's Skipper Says eSports 'Not a Sport', 'It's a competition'," in: *ReCode* (2014). This statement by Skipper became more compelling as ESPN broadcast The Dota 2 Championships (The International) during this same year.

60 Where T. L. Taylor notes in *Raising the Stakes* that players and organizations were moving past this defensive work around the sportiness of their practice, I still encounter players, organizations, and associations in Oceania which are constantly laboring to clarify the "sportiness" of their practice. Australia is a culture often defined by its allegiances between nationalism, sports success, and masculinity, and as such may offer a compelling space to engage in the performative work of players negotiating an image of sporting prowess and managing local productions and interpretations of sporting masculinities.

61 T. L. Taylor: *Raising the Stakes*.

sity in esports, when traditional sports are rife with binary definitions (and interrogations) of bodies in play? In leaving grassroots sites and scenes of play behind for the "big leagues," one can only wait and watch how traditional sports patronage engages and invests in high performance player/communities everyday experience as skilled contributors within this expanding world of sports media.

These three final themes sketch out the tacit and explicit, organizational and emerging nationalistic pressures placed on career players, and the need for increased attention to their expanding institutional roles and work-life experiences. With a decline in informal expert scenes of play, where players draw out robust and deep (vertical and horizontal) peer relationships,[62] players are turned slightly away from one another, materially and socially, and participate in diluting their own playing power and the cultivation of a collective voice. Summing up the state of affairs in organized esports, Andreas "Xyp9x" Højsleth (CS professional with Astralis) situates a regular circumstance for many "green" players: "With all due respect to a lot of organizations and their owners: Some players are getting screwed. Many of us players, including myself, are young and don't fully grasp what your worth is."[63] Some players are indeed getting screwed, and are losing, have lost, or never cultivated those near relationships to assist in discovering the value of their play, both economically and socially.

Many tensions are exposed on the lines of destabilization and refurbishment of various esports scenes. And when propped up on different structures, like livestreaming services with their spreadable, searchable content, we start to see what the "pivot" towards mega-institutions and networked audiences means for player practices. Talking from their bodies in play, as practiced players and as at times "widgets" (interchangeable system parts for negligent administrators),[64] esports players offer a glimpse of what's at stake for those whose flesh props up this growing mega media sports industry and the spectacularization of competitive digital play.

62 Fighting games prevail as esports scenes maintaining many aspects of grassroots and vertical/horizontal relational attention between players, administrators and commercial actors.

63 See http://astralis.gg/devve-we-received-a-lot-of-crazy-offers-in-the-off-season/

64 J. Connor: *Athlete as Widget*.

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LEAGUE OF LEGENDS (Riot Games 2009, O: Riot Games)

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Gamers(') *Talk*

A Conversation Analytic Approach to Let's Play Videos[1]

UTE BARBARA SCHILLY

A striking phenomenon of today's increasingly mediated world is playing digital games in the format of Let's Play on channels like YouTube, among others. What is striking is not only the individual playing itself as it is displayed to an anonymous audience, but even more the fact that the audience consists of a huge number of participants who usually cannot interfere in the process of the game being played but merely watch an individual—whom they do not know personally—play. And yet the mere reception of the game play of another seems to inspire great fascination. Indeed, a fan scene has been established. Many of the digital players have become stars in the gaming scene, whose individual game play videos have millions of views and subscribers. A crucial factor in why such a large (fan) audience is following the play of others seems to be the almost incessant commentary of the game player in the act of playing. This is confirmed by the numerous fan-created 'best-of-editions' for game player commentaries such as "Die besten gronkh ausraster" [*gronkh's best freak-outs*] of the German star game player Gronkh. This article is about the talking of gamers in Let's Play videos from the perspective of conversation analysis.

1 This article is based on the talk given by the author at the conference *Clash of Realities* in Cologne on November 15, 2016. The talk included case studies by student participants of the author's research lab for conversation analysis of gamer's commentaries in Let's Play videos. I thank Judith Hölling, Judith Prinz, Lara Raikowski and Vito Wetzel for their contributions.

SUBJECT: CONTOURS

So-called Let's Play is a still young, and therefore largely unexplored, media format that has developed as a remarkable media as well as social phenomenon. Ackermann, who published quite recently (2016) an anthology about Let's Play videos,[2] gives an overview about the genesis from the beginning of the phenomenon about 10 years ago, when screenshots of game scenes were posted in forums and comments were added by the players. Since then, a format has become established which is typically associated with voice-over-speech, and/or more often with shots of the player in actu by using a camera.[3] Also, there are now clear differentiations in the design of the various Let's Play videos, even approaches to transcend the focus on the computer game by creative adaptations and productions on the grounds of appropriation (e. g. PewDiePie) or interdiscursive cross-links of individual Let's Play videos with other media formats and genres, such as travel reportages (e. g. Sarazar). There are also differentiations concerning players' social constellations (including "Let's Play Together" or "Community Let's Play"[4]) or the portals used, but also in principle, as illustrated in the commercial versus non-commercial orientation of the individual Let's Play producer and gamer.[5] The complete spectrum of the individual media manifestations of Let's play videos cannot be addressed in this article, which focusses rather on the central subject of the gamers' commentaries.

The phenomenon of Let's Play has only recently been conceived as the subject of scientific analysis, thereby mainly within media studies.[6] Here, the importance of the gamer's commentary is in fact acknowledged,[7] but it is still not

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2 Ackermann, Judith (ed.): *Phänomen Let's Play-Video*, Wiesbaden: Springer 2016.

3 Ibid., pp. 2-9.

4 Hale, Thomas/Hartmann, Anna Lena/Schlemermeyer, Daniel: "Formen von Let's Plays und vergleichbare Formate," in: J. Ackermann (ed.), *Phänomen Let's Play-Video*, p. 257ff.

5 J. Ackermann: *Phänomen Let's Play-Video*, p. 8f.

6 Venus, Jochen: "The Clash of Meditizations. ‚Let's Play-Videos' und der Mythos des Computerspiels," in: *POP, Kultur und Kritik* 1 (2012), pp. 43-47; Ibid., "Stilisierte Rezeption. Überlegungen zum epistemischen Status von Let's Play-Videos," in: J.h Ackermann (ed.), *Phänomen Let's Play-Video*, pp. 19-29; J. Ackermann, *Phänomen Let's Play-Video*.

7 J. Venus: *The Clash of Meditizations*; Ibid., *Stilisierte Rezeption*; Biermann, Ralf/ Becker, Steven: "Faszination Let's Play-Videos: Rezeptionsmotive und -merkmale—

being treated as a central focus. Although Grünberger analyses the lingual data of Let's Play videos, her focus lies on the narrative construction of self and other.[8] Even though the fundamental relevance of online communication for conversation analysis, also with respect to digital games, has already been recognized,[9] a conversation analytic approach to gamers' talk has yet to be made.[10]

The decisive factor in the special role of Let's Play commentaries is the situation of reception elicited by the staging of a Let's Play video: it is quite right to talk about a paradox,[11] because Let's Play explicitly calls for a jointly played game, but "die Remediatisierung computerspielerischen Handelns in Form dramaturgisch aufbereiteter, audiovisueller Aufzeichnungen von Spielsequenzen [bewirkt] geradezu ihr Gegenteil." [*the remediation of computer game actions in form of dramaturgically prepared audiovisual recordings of game sequences leads quite to the contrary*].[12] Various media scientists, such as Fuchs,[13] speak here with allusions to Pfaller (2000) of "Interpassivität" [*interpassivity*] and "delegiertes Genießen" [*delegated enjoyment*] of the audience. Like a photographical positive to the particular situation of reception there is the practice of the gamer: How does he facilitate "enjoyment" for recipients, and how does he

Eine explorative quantitative Studie," in: J. Ackermann (ed.), *Phänomen Let's Play-Video*, pp. 161-179; Winuner, Jeffrey: "'Erfahrenen Gamern sozusagen über die Schulter schauen' Eine Interviewstudie deutscher YouTube-Nutzerlnnen zu Let's Play-Videos," in: J. Ackermann (ed.), *Phänomen Let's Play-Video*, pp. 147-160.

8 Grünberger, Nina: "Narrative Konstruktion von Selbst und Sozialität. Auf der Suche nach Produktions- und Rezeptionsmotiven von ‚Let's Play'-Videos," in: J. Ackermann (ed.), *Phänomen Let's Play-Video*, pp. 195-207.

9 A. o. Meredith, Joanne: "Using Conversation Analysis and Discursive Psychology to Analyse Online Data," in: David Silverman (ed.), *Qualitative Research*, New York: Sage 2016, pp. 261-276; Giles, David/Stonunel, Wyke/Paulus, Trena/Lester, Jessica/Reed, Darren: "Microanalysis of Online Data: The Methodological Development of 'Digital CA'," in: *Discourse, Context & Media* 7 (2015), pp. 45-51.

10 Schilly, Ute Barbara, "'okay jetzt laden wir grad biome n bisschen': Diskurse von Gameplayern in gesprächsanalytischer Sicht" (paper presented at the International Conference on the Art, Technology and Theory of Digital Games "Clash of Realities," Cologne, November 15-16, 2016).

11 J. Ackermann: *Phänomen Let's Play-Video*, p. 1.

12 Ibid.

13 Fuchs, Mathias: "Interpassives Spielen," in: J. Ackermann (ed.), *Phänomen Let's Play-Video*, pp. 31-41.

create and steer viewer reception? The central operation seems to be the incessant talking of the gamer.

ANALYSIS: GENERAL OVERVIEW AND SOME ASPECTS OF INSIGHT

Before we learn what the close analysis on a macroscopic level[14] of a selection of representative Let's Play videos shows, some general observations need to be made.

Two overall aspects are essential determinants of gamer commentaries: firstly, these are forms of spoken language which, despite the nature of the characteristic staging of Let's Play videos are to be regarded as natural talk. Secondly, the concept of the commentary practice is not only oral,[15] but essentially dialogic. This is true even for comments that seem to be more of a talk to oneself, but which are framed by the logic of a publically staged Let's Play video or, that is, a Let's Play video production meant for and aimed at an audience. It therefore shows traits of a conversation.

In general, dialogues and conversations in the mere sense of the words are constituted by two or more people.[16] Thus, they show, on the one hand, a quality of substance, that is the joint process of *making sense*. On the other hand, they possess a formal quality, which is the constant negotiation and organization of turns in the process of talking. Stukenbrock calls this "die interaktive Geordnetheit des Gesprächs"[17] [*the interactive, ordered nature of a conversation*] (cf. Garfinkel's theorem of the local production of order). Now, it is obvious that the gamer talks in Let's Play videos break this basic rule: there is only one speaker. Here, we disregard videos where the audience is asked to react immediately by the gamer, who then waits for the viewers' answers and continues

14 Deppermann, Arnulf: *Gespräche analysieren. Eine Einführung*, Wiesbaden: VS Verlag für Sozialwissenschaften 1999.

15 Koch, Peter/Oesterreicher, Wulf: *Gesprochene Sprache in der Romania: Französisch, Italienisch, Spanisch*, Tübingen: Max Niemeyer Verlag 1990.

16 E.g. Brinker, Klaus/Sager, Sven F.: *Linguistische Gesprächsanalyse. Eine Einführung*, Berlin: Erich Schmidt Verlag 1989, pp. 11-15; Lewandowski, Theodor: *Linguistisches Wörterbuch, volume I*, Heidelberg: Quelle & Meyer 1990, pp. 223f, 356f.

17 Stukenbrock, Anja: "Sprachliche Interaktion," in: Peter Auer (ed.), *Sprachwissenschaft: Grammatik—Interaktion—Kognition*, Stuttgart: J. B. Metzler 2013, p. 224.

playing while resuming what the audience wrote to him or by following the viewers' instructions and so on. In general, however, the (single) digital player's talk is formed unilaterally. This drastically reduces the core questions of conversation analysis, such as the fundamental aspect of turn-taking,[18] when we investigate Let's Play commentaries. The dialogicity of the gamers' talks are predicated on their being sculpted under the assumption of a (virtual) counterpart.

The gamer's action in Let's Play videos basically runs in two dimensions with which his practice of speaking correlates. Players of Let's Play simultaneously show a double media-interaction: Once there is the interaction of the player with the game itself. Here, the immersion in the game takes place, which is the role-taking in the plot, scene, and logic of the game. This can be visibly performed by an avatar. It is characteristic that the player does not only play, but performs his play by showing and constant commenting. I call this *game-related talking* ("spielbezogenes Sprechen"[19]). Very often this is thinking out loud, the subjective experience of the game and the immediate, but nonetheless mediated verbalization alias impartation of what the gamer literally goes through within the game. The gamer's commentary in this dimension of action is therefore *talking for/to the audience* ("Sprechen für das Publikum"[20]). On the other hand, there is the dimension of action that clearly and extensively exhibits traits of a dialogue. Here, the gamer turns explicitly towards his imagined recipients and speaks with them directly. I call it *recipient-related talk* because this is *talking with the audience* ("publikumsbezogenes Sprechen"; "Sprechen mit dem Publikum"[21]). Of course, this sub-division is heuristic, as the two dimensions of talking may converge or be interwoven.

The gamer's speech is not as unilateral as it may seem, which is confirmed by another global statement referring to the very fundamental logic of Let's Play: without an audience, there is no game nor speech performance. However, the gamer can only make meaningful offers to the public. Through the attention and reception of the audience as viewers and listeners, recipients accept and ratify the gamer's offer. The individual recipient among the mass of the dispersed audience then turns from an addressed object of interaction into an active subject

18 E.g. A. Deppermann: *Gespräche analysieren*, 61f.; K. Brinker/S. F. Sager: *Linguistische Gesprächsanalyse*, p. 58ff.; Cliff, Rebecca: *Conversation Analysis*, Cambridge: Cambridge University Press 2016, p. 95ff.

19 U. B. Schilly: 'okay jetzt laden wir grad biome n bisschen'.

20 Ibid.

21 Ibid.

who retraces the gamer's talk and re- or co-constructs meaning. Thereby, the often-occurring divergence between game on the one side, and *game-related talk* on the other side, for example in cases of irony, is bridged in a meaningful way.

What is offered to the recipients? We can assume that gamers make an effort to maintain the virtual conversation with the audience. How gamers produce Let's Play as a social event in speaking and how their speech as one part of the conversation community with the audience is structured, is the focus of the following.

The corpus of Let's Play videos to be selected for conversation analysis in the limits of this contribution is constituted by applying the following criteria to meet the purpose of a first approach. Firstly, Let's Play videos to be considered for analysis have to be of the least possible complexity to allow focusing on the respective player's talk. That significantly narrows down the number of selectable videos to those with only one player and his voice-over, that is without any usage of face-camera to exclude any nonverbal communication data. Secondly, videos have to be popular ones, produced by commercial, market-dominant gamers with a significant number of subscribers or views. This is important, because here the game players obviously apply especially effective procedures which lead to the popularity of the respective Let's Play videos and/or the player, if we do not take into account the factor of the game itself and its attraction to the public. As Biermann and Becker show in their study of reception motives for watching Let's Play videos, the majority of 364 persons interviewed, that is 73.4 percent, name the player's commentary as a motive for usage.[22] Nevertheless, to minimize the factor of game value or attraction caused by self-imposed strategies of mastering a certain game,[23] we will consider videos that seem to open up a new game experience to the player, enabling the recipients to follow the gamer playing the game in the moment of his first-hand interaction with the game. Thirdly, to gain an initial impression of the basic procedures that generally constitute gamer's talks, different genres have to be considered in the corpus. This includes thrilling games or parts of game videos on the

22 R. Biermann/S. Becker: "Faszination Let's Play-Videos: Rezeptionsmotive nnd -merkmale—Eine explorative quantitative Studie," in: J. Ackermann (ed.), *Phänomen Let's Play-Video*, pp. 170ff.

23 Newman, James: *Videogames*, Oxon: Routledge 2013; Lee, Patrick: "The Best Let's Play Videos Offer More Than Vicarious Playthroughs," last modified April 24, 2015, accessed January 2, 2017, http://www.avclub.com/article/best-lets-play-videos-offer-more-vicarious-playthr-218477

one hand and low-action games or parts of game videos on the other in order to filter out possibly varying procedures according to the genre. Fourthly, the selection of Let's Play videos for the corpus will be retrieved from German Let's Plays. Although the majority of (German) Let's Play gamers are male, a popular woman gamer, Honeyball, shall be included. The corpus consists then of Gronkh [Erik Range] and his Let's Plays of "Blackwell's Asylum"[24] as well as "Let's Play Minecraft. Life in the Woods",[25] Sarazar [Valentin Rahmen, member of the Gronkh Team[26]] and his videos of playing "Vortex. The Gateway"[27] and "Let's

24 Range, Erik "Gronkh": *Blackwell's Asylum, part #001—Eingewiesen,* https://www.youtube.com/watch?v=PmeSkBF__4Q (15:13, online since 13-04-13, 440,396 views until 14-03-17), *part #002—Lauf! Lauf! LAUF!!!,* https://www.youtube.com/watch?v=BmqrrwCniwo (15:43, online since 15-04-13, 181,779 views until 14-03-17), part *#003—Versteckspiele,* https://www.youtube.com/watch?v=lhYFJ9GpNlY (15:05, online since 17-04-2013, 110,384 views until 13-04-2017), *part #004—Verwirrungen & Irrungen,* https://www.youtube.com/watch?v=9axC7tux1e4 (13:39, online since 19-04-13, 100,348 views until 14-03-17), part *#005—Doctor Blackwell,* https://www.youtube.com/watch?v=tmP2EcXaUzo (12:55, online since 21-04-13, 103,580 views until 14-03-17).

25 Ibid., *LIFE IN THE WOODS* [S01E001]—*Alles auf Anfang. Let's Play Minecraft,* https://www.youtube.com/watch?v=ZqrXclgsAk4&list=PLGWGc5dfbzn_oXKrMl9P1jasL-PgulxNH&index=1 (31:27, online since 15-02-16, 2,801,165 views until 14-03-17),_[S01E002]—*Reise, Reise. Let's Play Minecraft,* https://www.youtube.com/watch?v=45JnbZnFCrA&list=PLGWGc5dfbzn_oXKrMl9P1jasL-PgulxNH&index=2 (30:20, online since 16-02-16, 1,123,100 views until 14-03-17), [S01E011]—*Hunger, Holz und Hustensaft,* https://www.youtube.com/watch?v=e9PSL7NUhLI&list=PLGWGc5dfbzn_oXKrMl9P1jasL-PgulxNH&index=11 (30:14, online since 25-02-16, 670,510 views until 14-03-17), [S01E012]—*Wir brauchen SELBSTSCHUSSANLAGEN!!,* https://www.youtube.com/watch?v=lUBR5Lyl7n4&index=12&list=PLGWGc5dfbzn_oXKrMl9P1jasL-PgulxNH (30:24, online since 26-02-16, 558,410 views until 14-03-17),_[S01E097]—*Zwischen & Durch,* https://www.youtube.com/watch?v=q-kYg7iUkzE&list=PLGWGc5dfbzn_oXKrMl9P1jasL-PgulxNH&index=97 (29:08, on_line since 21-05-16, 193,794 views until 14-03-17)

26 https://gronkh-wiki.de/wiki/Honeyball, accessed 02-02-2017.

27 Ralunen, Valentin "Sarazar": *VORTEX:THE GATEWAY #001: Überleben auf einem fremden Planeten. Let's Play Vortex,* https://www.youtube.com/watch?v=oAV3SiUzC2I (28:10, online since 11-10-15, 149.634 views until 22-03-2017), #002: *Insel der Schrecken. Let's Play Vortex,* https://www.youtube.com/watch?v=T_v4Xk4Q1Ew

Play Minecraft" by Honeyball[28] [Isabel Zimmermann, also a member of the Gronkh team].[29]

In a naturalistic understanding of the data[30] given in the Let's Play videos stated above, a gross pattern suitable for a deeper level of analysis and, subsequently, for a comparison of the videos emerges. Its single categories refer in each case to first, the medial frame of the respective Let's Play video talk (player, game genre, intro etc.), and second, to the merely talk-related categories as the central subject of conversation analysis. The latter consists of a) the segmenting phases of each gamer's talk, b) the verbal and c) paraverbal means used in the conversation, d) *the game-related talk* (*talking for/to the audience)* as explained above (p. 3), and e) *the recipient-related talk* (*talking with the audience*), also see above (p. 3). These categories are heuristic dimensions of analysis, since the phenomenal procedures which can be assigned to the categories overlay with each other, synthesizing to a full effect.

With regard to the medial frame, it can be generally stated that all gamers have long before established and now re-position themselves anew in each Let's Play video as a brand, with for instance even an alias as a registered trademark as e. g. Gronkh. Also, most of the Let's Play videos do not only state the name of the game, but also have been given another, catchy title which is combined with the game's title, e. g. "Let's Play MINECRAFT: Eine Nacht unter Feinden"[31] [*a*

(20:10, online since 13-10-15, 73,835 views until 14-03-17); *#003: HORROR! Die Bestien kommen. Let's Play Vortex,* https://www.youtube.com/watch?v=5537ximTEg4 (20:19, online since 14-10-15, 51,064 views until 14-03-17).

28 Zimmermann, Isabel "Honeyball"/"Honigball": *Let's Play Minecraft #001—Pass bloß uff, ich hab ein Holzschwert,* https://www.youtube.com/watch?v=vkdnYxNtDi4 (21:52, online since 29-08-2012, 789,557 views until 23-03-2017), *#002—Eine Nacht allein unter Feinden,* https://www.youtube.com/watch?v=ma5YYSys5oQ&list=PL420A7FF7E9B0BB3B (16:50, online since 30-08-12, 258,335 views until 14-03-17) https://www.youtube.com/watch?v=QZiSquBNwaI&list=PL420A7FF7E9B0BB3B&index=14&spfreload=5, *#014—Trautes Heim, wer ist Traute?,* https://www.youtube.com/watch?v=QZiSquBNwaI&list=PL420A7FF7E9B0BB3B&index=14&spfreload=5 (13:52, online since 11-09-12, 110,992 views until 14-03-17).

29 https://gronkh-wiki.de/wiki/Honeyball, accessed 02-02-2017.

30 Deppermann, Arnulf: "Ethnographische Gesprächsanalyse: Zu Nutzen und Notwendigkeit von Ethnographie für die Konversationsanalyse," in: *Gesprächsforschung— Online-Zeitschrift zur verbalen Interaktion* 1 (2000), p. 96.

31 I. Zimmermann (Honeyball): *Let's Play Minecraft #002.*

night among enemies] (Honeyball). Here, and this is true for most Let's Play videos and not only for the videos in this study, many allusions to collective knowledge are made, e. g. "Life in the woods: Erze ohne Grenzen" [*ores without borders*; playing on the phonological closeness to the organisation Ärzte ohne Grenzen, *Doctors without Borders*] by Gronkh. Word play or rhymes are produced with the obvious intention to be witty and funny, for example "Life in the woods: Grillen killen unsere Rillen" [*grills/crickets kill our rills*, nonsensical, merely sound based rhyme] or "Life in the woods: Das Sortier im Manne" [*the sorting in man*, nonsensically playing on the phraseme "Das Tier im Manne," the *animal in man*, and the morpheme 'tier'] by Gronkh[32] or "Let's Play Minecraft: Trautes Heim, wer ist Traute?"[33] [*Home sweet('s) home, who is Sweet*?, deliberately mistaking the German declination of the adjective 'traut' for the genitive of the female name 'Traute'] by Honeyball.

A deeper insight into the conversational data shows that all Let's Play videos analyzed within our collection of videos have characteristic features in common. This will be outlined in the following according to the order of categories described above.

It is striking that Let's Play videos display a common underlying structure. The structure roughly mirrors the three major phases which can be observed in the majority of natural conversations: an opening phase, a nuclear phase, and a closing phase.[34] Since a Let's Play of a single game is cut into single parts for an easier 'digestible' length of performance to an audience, not every video of the same series has an opening or closing talk, but usually at least the first sequence of a game series has an introduction. This can be seen in the first two sequences of "Blackwell's Asylum" (part #001 and #002) by Gronkh, where the first part contains a welcome ritual including information about the game and its features, while the second part starts in the midst of action (here: a fleeing scene). Up until the last part of the game, only the cutting points separate the videos from each other. It is obvious that Gronkh played the game in one go and then edited his production into single parts. The last video of the series, part #005, ends with a closing talk typical for Let's Play, summing up the experience with the game,

32 U. B. Schilly: 'okay jetzt laden wir grad biome n bisschen'.

33 I. Zimmermann (Honeyball): *Let's Play Minecraft #014*.

34 Linke, Angelika/Nussbaumer, Markus/Portmann, Paul: *Studienbuch Linguistik*, Tübingen: Max Niemeyer Verlag 2004, p. 318; Brinker/Sager: *Linguistische Gesprächsanalyse*, p. 91ff.; Henne, Helmut/Rehbock, Helmut: *Einführung in die Gesprächsanalyse*, Berlin: Walter de Gruyter 2001⁴, pp. 256-260.

thanking the audience, and asking them to comment and to join in again. Correspondingly, the same is true for the closing sequences of Sarazar's "Vortex. The Gateway," parts #001 and #002; only the first video of the series is ritually closed by saying goodbye to the recipients and also, as it is generally typical for Let's Play videos, an appeal to the recipients is made to join in and watch again. Here, Sarazar even asks for comments from the audience in the form of advice for his future play. In general, gamers often ask for a 'like' on YouTube, etc. The second video, however, stops abruptly without a closing talk. Henne and Rehbock are right to refer to Goffman's aspect of ritualized communication as face-work,[35] because Sarazar apologizes to his viewers in the third Let's Play video of his playing "Vortex" (02:15—02.20) for failing to end his second video 'properly'. He explains: "ja sorry/ dass ich die letzte folge so abrupt abgebrochen hab/ aber HEI:/ spannung/ cliffhanger/ pipapo/ ihr kennt das ganze" [*yes* sorry/ *that I broke off last time so abruptly/ but* HEY:/ *suspense*/ cliffhanger/ *the whole shebang/ you know it all*].

As with closing, opening conversation is highly standardized in its essence. In the two video parts of Sarazar's "Vortex"-game, his welcoming comments are not only verbally similar but they also sound alike. Honeyball's first video of the second series of MINECRAFT starts immediately with her already playing, but after 22 seconds, she clearly marks a transition by raising her voice to welcome the audience to her play and then gives the typical information about the game, the current setting, etc.[36] Overall, opening talk which has to fulfill social and organizational tasks[37] may vary from gamer to gamer, but usually it contains the following: greeting, identification of the gamer (as redundant as this may be, e. g. "ich bin übrigens der Sarazar" [*by the way I am Sarazar*], information about the game and opening up the game discourse with contextualizing and categorizing the game and some of its technical traits, filling the viewer in on what happened before, what is to happen now, etc. and thus, 'guiding' recipients into the Let's Play. Apart from typical markers indicating the initiation of closing comments, this phase usually revisits the game discourse which was started in the opening sequence and may have been alluded to during the nuclear part of the talk in the course of the game, thus building a coherent frame. This sequence also includes summaries, requests for likes or comments, well wishes, and saying goodbye. Thus, by the underlying structure of opening, nuclear, and closing

35 H. Henne/H. Rehbock: *Einführung in die Gesprächsanalyse*, p. 274.

36 I. Zimmermann (Honeyball): *Let's Play Minecraft #001*.

37 A. Linke/M. Nussbaumer/P. Portmann: *Studienbuch Linguistik*, p. 318.

parts of the commentary with a particular importance of opening and closing phases as they present a reliable frame, Let's Play videos are like a ritual of familiarity and orientation. They offer a reliable world and confirm expectations of talk which are collectively learned. Gamer conversations thus produce and reproduce social reality—in the digital deviation of the world.

As to the categories on the verbal and paraverbal levels it proves to be typical for Let's Play videos that all gamers open up a cornucopian variety of procedures. On a verbal level, gamers use different registers, from very vulgar verbal expressions and colloquial style on one end of the scale. They also apply teenage slang, even though some gamers are far beyond the teenage years (e. g. Gronkh is 38 years old). On the other end of the verbal scale, gamer's talks in the Let's Play videos of this study also show usage of a more educated lexicon and, very clearly, technical language (e. g. "Schneebiom" [*snow biome*], "Paranoia" [*paranoia*], "Psychose" [*psychosis*] by Gronkh). Gronkh even makes language-sensitive remarks and checks his usage of language on an explicit meta-linguistic level ("im gleichen Raum—im SELben Raum, Entschuldigung" [*in the similiar room, in the SAme room, sorry*, 'gleich' and 'selb-' are often confounded in German, and Gronkh apologizes after correcting himself]). An important phenomenon is the gamers' use of digital game language, which underlines Venus' thesis that Let's Play videos do not merely entertain, but also function as a form of expression of the computer game discourse,[38] e. g. Sarazar: "das game basiert auf der unity engine/ die kennt der ein oder andre vielleicht aus The Forest und Co/ auch viele spiele werden ja darauf gemacht/is nur nicht ganz so performanceausgearbeitet" [*the* game *is based on the* unity engine *which maybe some know from* The Forest and Co/ *and many games are made on that / it's just that its* performance *hasn't been worked out too well*]. Of course, in using in-group language in the realm of digital games, gamers (re-)produce and share common knowledge of the digital game community and culture and maintain their (doing) being 'in' and thus, rise the attractiveness of their Let's Play videos. This is reinforced by the gamers' use of digital game language abundant with Anglicisms, which might be hard to understand by digital outsiders, e. g. Gronkh in Minecraft: "habe grad keine alerts laufen" [*I don't have any* alerts *running*], "da hat grad jemand subscribed aufm twitch-channel" [*somebody just* subscribed to *the* twitch channel].

Another principle for the stylistic devices is variation: the gamers' discourses in our selection of videos feature rhymes, puns, alliterations and assonances,

38 J. Venus: *Stilisierte Rezeption*, p. 19.

rhetorical questions, repetitions of words or phrases, and irony. The latter proves to be a very important procedure within the category of *game-related talk* alias *talking to/for the recipients*. Before we get to that, the findings on the paraverbal level of the gamers' talks shall be resumed. Paraverbal procedures include everything, breathing aloud and pragmatically meaningful in concordance with the respective game scene, whispering, shouting, growling, screaming, singing, 'genre voicing' (like scary thriller intonation), and role-play voicing—all in all an extreme differentiation in the modulation of voice, intonation, speed, and volume can be found.[39] Hereby each phase of a certain kind does not last for long, on the contrary, variation happens at very short intervals, which proves to be typical of Let's Play gamers' conversation.

The analysis of the category of *game-related talk* (*talking for/to the audience)* unfolds above all in the comments of the gamer's actions in play. He/she explains why he/she does something and also explains (parts of) the game itself. Here, he/she sometimes interprets what is happening in the game, evaluates the game or scenes of it and/or compares the game to other games. Usually the discourse contains spontaneously created conversations with figures or creatures within the game; sometimes the role of the respective figure or creature is 'voiced'. Other *game-related talk*—and here, the *talking for/to the audience* is clear—consists primarily of expressions of the gamer's associations, feelings, and physical states, such as feeling hungry, cold, afraid, surprised, etc. The most important variations of *game-related talk* have two main effects. In variation one, the situation of the respective game scene is enhanced and immersion of the recipient is facilitated, e. g. Gronkh, creeping around in "Blackwell's Asylum" trying to escape the guard (#001, 3:20—3:40): "<verzweifelt> nein nein (2.0)/ nein/ <flüsternd> ich bin es nicht ich bin es nicht (5.0)/ nicht atmen (6.0)/ nicht atmen nicht atmen (2.0) <weinerlich> hau ab hau ab hau ab hau ab hau ab" [*<desperate> no no (2.0)/ no/ <whispering> it's not me it's not me (5.0)/ don't breathe (6.0)/ don't breathe don't breathe (2.0)/ <crying> go away go away go away go away go away*]. The other effect is based on the variety of the procedures mentioned above which, all in all, entertain recipients on a level which is in opposition to the intended effect of the game (especially in the case of abundant ironic remarks) or actually transcends the game (for example by personal

39 U. B. Schilly: 'okay jetzt laden wir grad biome n bisschen'.

information or narrative excursions by the gamer, esp. by Sarazar), thus preventing the audience to become immersed in the game.[40]

Although gamers refer to themselves in the first person while interacting with the game, they mostly use the pronoun "we," supposedly to include the individual recipient (e. g. Sarazar: "dann trinken und essen wir ersma uns den Bauch voll/ denn das haben wir uns verdient" [*let's drink and fill our bellies first/ because we've earned it*], Gronkh: "wo ist denn diese verfluchte Wache/ und wieso hat sie uns in der Dunkelheit so gut gesehen/ was hilft denn all das Schleichen/ wenn die uns sofort sehen" [*where is the damned guard/ and why did he see us so well in the dark/ what's the use of all this tiptoeing/ when they see us right away*]). This is closely linked with the level of the *recipient-related talk* and the gamer's *talking with the audience*, which will be focused on next.

Gamers in their Let's Play performances relate directly to the imagined recipients by addressing them individually (e. g. "weiße was ich jetz mal mache" [*know what I'm going to do*], Gronkh) or taking and even voicing the perspective of the audience, in this example with a plurality of recipients addressed, Gronkh in "MINECRAFT," #S01E009, 22:50-22.58: "und ihr wisst genau was ich vorhabe (3.0)/ hoff ich/<stimmverstellend> nein gronkh/ wir wissen nich was du/ doch doch/ diesmal wisst ihr das" [*and you very well know what my intentions are (3.0)/i hope/ <voicing another person> no Gronkh/ we don't know what you/oh yes oh yes/ this time you know*]. In any case, recipients are addressed in the informal manner, suggesting familiarity with each other.

To sum up, it can be said that every Let's Play video unfolds a rich and diverse variety of conversational procedures used by the respective gamer. All stops are pulled to ensure the "Genießen" [*enjoyment*] of the public mentioned above (p. 2). In doing so, Let's Play video talks resemble each other strongly. However, their individual profiles show slight differences which correlate to the respective gamer's personal preferences or talents. For instance, Gronkh strongly uses the spectrum of his voice, while Sarazar rather tends to integrate biographical narrative elements (e. g. "bambus is ja echt n toller baum/ hab ich ja in Japan/ war ich ja in som bambus ( ) [...] [*bamboo really is a cool tree/ I have like in Japan/ I was in such a ( ) [...]*).

40 J. Venus: *Stilisierte Rezeption*, p. 27; Rodewald, Vera Marie: "Die Lust am Vorspielen. Zur theatralen Inszenierung des Computerspielens," in: J. Ackermann (ed.), *Phänomen Let's Play-Video*, p. 109.

CONCLUSION

As the analysis of the Let's Play videos correlating with the categories derived from the emergent matrix has displayed, there seems to some general shared elements among Let's Play video talks. The diversity and abundance of procedures applied by gamers in their commentary leads to the popularity of their Let's Play videos even if we do not take the respective game and genre into account. Of course, further microanalysis of the correlation between gamer commentary and the respective game scene of a particular game and game genre would grant a deeper insight into the particular social practice of gamer talk. In combination with the latter, it would also be worthwhile to analyze in which moment discrete procedures flow into another one and thus carve out the rhythm and pattern of the respective procedures applied in a game. This would not only allow a comparison of the underlying patterns and regularities of commentaries for different games and game genres as well as to reveal the techniques of creating arcs of suspense and bits of entertainment as a whole, of attracting and maintaining attention, but also to compare players' speech profiles in more detail. As it has been indicated, what is common to all Let's Play talks is the huge variety of verbal and paraverbal means as well as the basic structure of each talk; what differs are the individual key aspects of each gamer.

Addressing the recipients directly and informally using "du," "ihr" [friendly *you*] as well as sharing with them the personal intimate perspective and virtual first-hand experience of playing a particular game (stressed by the usage of "wir" [*we*]), has the effect of letting each recipient sit on the shoulder of the gamer and take part in an entertaining rollercoaster ride through a game. Especially for younger recipients it might be comforting not to be alone in scary situations, but to be "protected" by the brother or friend-like gamer, who is the first to walk down a narrow, dark path. Being close to somebody else, sharing his feelings throughout an adventure, as a matter of fact may be experienced in reality by the individual recipient, but is nevertheless a virtual illusion. Thus, the findings on the mere basis of gamers' talk described here may be suitable as a rough piece of complementarity to empirical studies of recipients' motives, as by Wimmer[41] or Biermann and Becker.[42] From the visible procedures in talk, if we only consider the huge spectrum of lexical hues and registers, each Let's Play talk seems to offer something for everyone—further empirical research into the

41 J. Wimmer: "Erfahrenen Gamern sozusagen über die Schulter schauen".

42 R. Biermann/S. Becker: *Faszination Let's Play-Videos.*

social spectrum of the broader Let's Play audience might augment existing studies.

Of similar importance are the sections of highly entertaining commentaries such as irony, narration, word plays, singing, and so on and all this in the most diversified way possible which balance and build a divergence within particular game sequences. The procedures applied by the Let's Play gamers do not just happen, authentic as their outspokenness may be, even in the major parts of the respective Let's Play videos. All play is staged, all verbal and nonverbal means work as strategies which attract and bind viewers. Interestingly, at the same time as drawing the recipients as close as possible to the player and his/her perspective and thus into his/her real game experience, the almost constant and ironic comments from the gamer not only cause anti-immersion (cf. p. 8), but have the same effect as the acts of distancing in Brecht's Epic theatre. The breaking of illusion once again invites recipients to join the digital games discourse and be part of a potentially critical in-group community, which may suggest to be above mere users of computer games. Nevertheless, as it has been shown here, however creative, artful, and diversified the techniques applied in the Let's Play gamers' talks are, the frame for all the creative talk is always a conventional one: on a larger scale, gamers also use commonplace conversational procedures for their public by structuring their talks in every day conversational stages (opening, nuclear, and closing). On the grounds of this common basic structure of Let's Play commentaries as well as the phenomenon of verbal and paraverbal diversity of procedures interwoven into the common Let's Play action scheme of conversation ('Handlungsschema', Kallmeyer and Schütze 1976), Let's Play gamer speech can be classified as a conversational type of its own.

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II.3 Film and Games Summit

Introduction

LISA GOTTO

Ludic concerns have consistently been at the heart of moving images. In the 19th century, optical toys like the flipbook, the phenakistiscope, the thaumatrope, the zoetrope, and the praxinoscope allowed viewers to play with the moving image and to explore visual illusion as a game in its own right. Far from being mere toys for children, these optical devices demonstrated new ways of experimenting with what and how we see things through play. Subsequently, later motion picture films have preserved and built on this specific ludic spirit.

Since its inception, cinema has profoundly relied on the ability to play with audiences and to investigate game motifs and game motivations. From the playfulness of slapstick comedy to the creation of characters like gamblers and tricksters, from the cinematic construction of visual sites of play like speedways, roller coasters, and race courses to the filmic architecture of game spaces like stages, arenas, labyrinths, mirror halls, or casinos, from the self-reflexive function of playing with genres to the ludic scenarios of mindgame movies: Cinema has developed an extraordinarily rich tradition of playing games with and through film.

Commenting and reflecting on this cineludic legacy, the articles of this section trace the relationship between film and games theoretically and through the analysis of compelling examples. They are largely focused on the following questions: Can the cinematic corpus offer a contribution to the evolution of game logics and aesthetics? Can it inspire and provoke the way we think about the philosophy of games? And finally: What more can we learn about video games through the lens of film studies?

Lorenz Engell's essay "Serial Games. On the Philosophy of Difference and Repetition in Moving Images" focuses on the intricate relations between seriality, intermediality, and creativity as they occur in film, television, and digital

games. By drawing on the philosophical concepts of seriality from Stanley Cavell, Gilles Deleuze, and Ludwig Wittgenstein, Engell argues that moving images shape our understanding of seriality and can be read as a philosophy of difference and repetition. The distinct quality of digital games, however, allows us to rethink established notions of seriality and processuality. Games are not only objects but also operations; they unfold as activities, practices, and experiences that are able to undermine the distinction of simultaneity and sucessivity, of space and time, and of reproduction and creativity.

In "Games that Play People: The Facts in the Case of D. Cronenberg," Bernd Herzogenrath explores how film expands the notion of games and the concepts of absorption and immersion that are associated with it. By focusing on David Cronenberg's VIDEODROME[1] and EXISTENZ,[2] he contends that these films offer a concept of the virtual that goes beyond the virtual reality of computer games. Both films, in different though related ways, are concerned with cinematic topologics that perforate the boundaries of the magic circle. By fusing and amalgamating various states of inside and outside, virtual and actual, they open play and playfulness in such a way that the distinction between different layers of reality becomes indistinguishable. As such, Herzogenrath maintains, they produce not so much a "clash of realities," but rather an interlacing of realities.

Rembert Hueser's essay "Abu Goat" offers a cultural-archeological examination of GOAT SIMULATOR,[3] a popular third-person simulation game in which the player controls a goat in an open world setting. Digging up sources as varied as Homer's *The Odyssey,* Alfred Edmund Brehm's *Life of Animals,* images of Abu Simbel, short comedy films from the 1920s, industrial films from the late 1950s, and Hollywood action films from the 2000s, Hueser rebuilds the logic of the game's ludic landscape as a multifaceted intertwining of the effects of technology and modernity. By approaching GOAT SIMULATOR as a complex compound of knowledge constellations, Hueser reveals the ideological tendencies that are inscribed in this game, through both design and play.

1 VIDEODROME (CA/USA 1983, R: David Cronenberg)

2 EXISTENZ (CA/GB 1999, R: David Cronenberg)

3 GOAT SIMULATOR (2014, ●: Coffee Stain Studios)

FILMOGRAPHY

eXISTENZ (CA/GB 1999, R: David Cronenberg)
VIDEODROME (CA/USA 1983, R: David Cronenberg)

LUDOGRAPHY

GOAT SIMULATOR (2014, O: Coffee Stain Studios)

Serial Games

On the Philosophy of Difference and Repetition in Moving Images

LORENZ ENGELL

1.

On December 1, 1963, the world of American Football was shaken by an unprecedented event. In the 1963 Army vs. Navy game, some ten minutes before the end of the game, Army quarterback Carl Rollie Stichweh scored six points in a spectacular move against the Navy team who was far ahead. And less than a minute later, with exactly the same move, against any probability and experience, Stichweh performed another touchdown and scored again. At least that was what it looked like to some million spectators who watched the live televised game on CBS that night. When they noticed, another minute later, that Stichweh's second touchdown was not counted, many of them called the CBS studio by telephone and asked why. The reporter had to declare during the still running live coverage of the game that the second touchdown had never taken place, that it was only a second broadcasting of the footage from the first one, and that this repetition had been cut into the constant flow of live images via a new technology called "Instant Replay".

From then on, Instant Replay became a standard feature (especially) in sports television,[1] and it allows for a still fascinating experience of primordial function in which the difference between diverging dimensions of time—for instance

1 Malinowski, Eric: "Dec 7, 1963: Video Instant Replay Comes To TV," in: *Wired*, July 12, 2010, https://www.wired.com/2010/12/1207army-navy.game.first-instant-replay/

presence as a point incessantly moving through time, and presence as extended, ongoing status of being, or duration of becoming in a Bergsonian sense—seems to be suspended.

This episode illustrates how gaming and technical media interact in creating specific and complex forms of repetition. Games and plays, gaming and playing are deeply involved with repetition. This we know from all the classical theories of play and games from Friedrich Schiller through Huizinga to Caillois and others. And technical media as well, from printing through photography and moving images of all kinds to the computer and the web, are especially involved and even saturated with repetition, with reproduction, recursion, feedback, and iteration.

Our football episode also clearly shows that repetition is not just the same happening again. On television, at least in its classical form as electric tube television, nothing ever can truly stay the way it is because the image itself does not really exist as a stable entity in time, but is literarily written by the cathode beam, the first pixels vanishing before the last ones are done 50 times per second. Television and all electric media are time-based; hence they rely on repetition in order to stabilize. But even if the same event occurs again, one might say, it is not the same, since, very much like in Instant Replay, at least the point in time of the event has changed, as has the world around it. Were it different, there would be no repetition at all. Repetition is always related to difference as well.[2]

One way to describe and further discuss these intricate relations between repetition and difference as they occur in games and media is the concept of seriality. A series is a multitude of objects that is aware that it is a multitude. Or, if you object to the idea of self-aware objects or multitudes, you might say that a series is a multitude of objects that by its very qualities makes us think of it as a multitude (or think that it was a multitude which we can conceive of only under the condition that we realize and address it as a multitude). If the objects involved are mainly based in space, they are things; if they are mainly wrapped in time, they are events. If space, as Leibniz puts it in his famous formula found in his letter to Clarke, is the order of the coexisting, (spatium est ordo cexistendi, he writes) and hence relational, we can say that, according to the aspect of the objects ordered, we are dealing with either synchronicity and space, or succession

2 Deleuze, Gilles: *Différence et répétition*, Paris: PUF 1968.

in linear time.[3] The couplings of repetition and difference which operate seriality hence can be addressed as complex crossings of synchronicity and successivity.

This is why almost all theoretical approaches to seriality, be it the seriality working in and through definite media like television, or be it in more general terms, derive from the assumption of the underlying dichotomy of synchronicity and successivity. This applies to the discussion of seriality in and of computer games. One remarkable exception is Lisa Gotto's outstanding analysis of the seriality of and in the game TYPE RIDER published in 2014 in *Eludamos*.[4] Other exceptions are Shane Denson and Andreas Jalm-Sudmann's article on digital seriality, also in *Eludamos*, and Dominik Maeder's text on the same topic, published in *Navigationen*,[5] and a special issue of *Paidia* on seriality, edited by Alexander Schlicker.[6]

In the following, I will return to Lisa Gotto's reflections; most of my contribution is but a footnote to her work on this subject. In very general terms, Lisa argues that in TYPE RIDER we have an ongoing experience, experiment and reflection of seriality which leads us from a concept of seriality as repetition to a concept of seriality as an operation of creativity, hence the production of the new.

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3 See Schepers, Heinrich: "Neues über Zeit nnd Raum bei Leibniz," in: Erich Barke/Rolf Wernstedt/Thomas Kisser (eds.), *Studia Leibnitiana* 38/39, Stuttgart: Steiner 2009/2010, pp. 3-18.

4 Gotto, Lisa: "Types and Bytes. Ludic Seriality and Digital Typography," *Eludamos. Journal for Computer Game Culture* 8/1 (2014), pp. 115-128.

5 Denson, Shane/Jahn-Sudmann, Andreas: "Digital Seriality: On the Serial Aesthetics and Practice of Digital Games," in: *Eludamos. Journal for Computer Game Culture* 7/1 (2013), pp. 1-32 and Maeder, Dominik: "Transmodalität transmedialer Expansion. Die TV-Serie zwischen Fernsehen nnd Online-Medien," in: Dominik Maeder/Daniela Wentz (eds.), *Navigationen: Der Medienwandel der Serie* 13/1 (2013), Siegen: universi 2013, pp. 105-126.

6 Schlicker, Alexander: "Gespielte Serialität oder Computerspiele in Serie: Medien—Theorien—Kulturen," in: *Paidia*, Sonderausgabe, March 22, 2017, http://www.paidia.de/?page_id=9550

2.

To begin, Gotto shows that games, taken as commodities, do circulate in a capitalist market, in huge numbers of copies to be sold or ripped, and hence always appear in a sort of series.[7] Capitalist or industrialist production has, with precisely the printing press as a forerunner, always been based on serial production. Since the commodities produced are mainly addressed as things, the type of seriality involved in serial production, distribution, and consumption is synchronic. All objects produced are tokens of exactly the same type, exact copies of one model, or blueprint, or program. All items stemming from mass production look completely like all the other tokens of the same type, and they operate against sequential linear time since they have no index in time. A car made yesterday is not distinguishable from a car made in a week.

Moreover, serial commodities pervade a market conceived of as space. All of this can also be said about computer games as commodities to a certain extent. The deep difference, of course, is that, quasi by nature, digital tokens can be reproduced almost without loss, and can hence serve as a type at the same time: the machine of use of the token being the machine of possible copying at the same time. This results in a change of the difference of token and type which, in the digital world, is reduced to a mere temporal, ephemeral or aspectual one. Nonetheless, the copies form a series in space, within the order of the coexisting, since they all are to be found on the same layer of time, regardless of the point in time when they are generated.

Only by an extra operation of interruption, or punctuation, linear time comes back into play, and for purely economic reasons, when once a year a new style is created such as in the fashion industry or, at least in the American car industry of the 30s through the sixties, a new design is launched every year. The same is true for computer games. Games can have versions and subsequent issues that differ from each other, hence marking exact points in linear time and eventually creating events in time when they are launched. This is exactly what Denson and Jahn-Sudmann describe as "inter-ludic seriality".[8] The chain of released versions of a game has the form of seriality in time, of more than repetitive or reproductive serialization. In the sense of our understanding of seriality quoted above, the 5.0 version of a game defines itself in relation to prior and subsequent versions, and this is exactly what makes the mere sequence of versions a series. So, the

7 L. Gotto: "Types and Bytes".

8 S. Denson/A. Jahn-Sudmann: "Digital Seriality".

two distinct forms of serialization—one based in space, one based in time, one strictly reproductive, concentrating on repetition, the other on difference—can be observed if we look at computer games as commodities.

If we switch from games as objects to games as activities or practices, from things to operations, serialization becomes more complicated. Now, we are talking about what Denson and Jahn-Sudmann call intra-ludic seriality. In gaming, the same actions have to be repeated over and over and over again. We can see here the before mentioned dichotomy again. In some cases, the repetition is a closed one, exactly the same occurs again, no progress in linear time is involved or intended, like in many children's plays. In other examples there is directed time, where the action is repeated to overcome an obstacle, to master a challenge or problem, or to explore and find something and so on. Progress in linear time is at stake, but held back by repetition, again in analogy to Instant Replay practices. In computer games, though, repetition is not repetition but involves difference. The action must not be repeated the very same way. Repetition here is the production of difference, of variants slightly differing from each other. In some cases, this process is convergent. It runs towards creating a match between the variant of the action and a blueprint of the master solution. In other cases, though not always necessary, the process is open, and the chain of variants in itself is the advancement in time.

We can think of this in terms of the classical moving image, where we have, on the most reduced level, the level of the sequence of frames on the celluloid strip, images that look almost alike, with minimal differences only, but through the sequence of frames, it is these differences which produce movement in space and time. In computer games, the obstacle then is no obstacle in an object-like sense, but a field of possibility in the sense of a logic of time and modality. Every object produced in this kind of series, thing-like space object to be found or created, or time object, event to be released or generated, is defined not so much by its relative closeness to a type or blueprint or model, but, on the contrary, by its ability to enable further variations. This is exactly what Gotto analyzes in TYPE RIDER and defines as "creativity" of serialization.[9]

In TYPE RIDER, though, according to Gotto, there is even more, since this game refers to the remediation and evolution of the reproduction of writing from the printing press to the digital age.[10] Hence, its semantics or "content" deals with the series of technologies of serialization of the written word in western

9 L. Gotto: "Types and Bytes."

10 Ibid.

teclmology. It conceives of the remediation process as a series which, in addition, leads from mere reproduction teclmologies, hence: serialization as synchronization in the sense mentioned above, to serialization as open succession in the production of subsequent fields of possibility which are ascribed to the processing of digital writing.[11]

In TYPE RIDER, according to Gotto, at least three layers of seriality interact. On the first layer, the remediation of writing as media evolution from Gutenberg's printing press to the digital is being reconstructed or recreated, by playing the game and hence, following the path of trial, error, and another trial, i.e. by means of serialization. Second, reconstruction or recreation takes the form of seriality: the process of media evolution itself unfolds as a serial process. And third, this evolution leads from one principle of serialization to a second one. The first one is based on static reproduction of one and the same type like in the Gutenberg press, which means production of synchronicity of all tokens of the same type, ordering the co-existing (ordo coexistendi), and being based in space. The other one operates through the dynamic generation of subsequent possibilities and hence opens up an evolutive successivity which is based in time.

The designing of media evolution as a series is not an idiosyncratic idée fixe of TYPE RIDER and even less of Lisa Gotto's. Denson and Jalm-Sudmann also refer to it under the notion of "para-ludic seriality".[12] To them, the succession of spin-offs of computer games in other media, like comic books, classical non-digital games, t-shirts and caps, gifs, Let's Play videos and even feature films or television shows can also be described as a serial process. Dominik Maeder, in his above quoted article, analyzes the similar movement from the point of view of the television series and its transmediality, or transmedia storytelling. He shows that the remediation, or transmedia evolution, as he puts it, of the TV-based series or serial by and in other media (mainly digital formats on the web) and expressly including the computer game, indeed shows seriality as the form of its processuality.[13] To sum up, teclmologies of serialization, among them the computer game, evolve in serial modes, and at the same time the modality of serialization evolves from reproduction to open evolution and from its grounding in space to its grounding in time.

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11 Grusin, Richard/Bolter, Jay D.: *Remediation. Understanding New Media*, Boston: MIT Press 1998.

12 S. Denson/A. Jahn-Sudmann: "Digital Seriality."

13 D. Maeder: "Transmodalität transmedialer Expansion."

3.

This leads us back to the underlying concept of seriality and its basic assumption of a dichotomy of identity (or repetition) and difference, of space-based reproduction of simultaneity and time-based production of successivity. This concept which at first sight seems evident is nonetheless discussed and questioned in the philosophy of difference and repetition, or of seriality. In his highly influential essay on the topic, entitled "The Fact of Television," Stanley Cavell discusses seriality from the point of view of television.[14] To him, seriality is the decisive feature of television. Everything that happens on television, and not only those shows and mainly fictional formats that are explicitly marked as series or as serials, is serial. News shows, sport shows (again), quiz shows, talk shows, they all form serial structures, Cavell asserts.[15]

He then draws a distinction between two different repetitive forms, which he observes not in television, but in the movies, the two forms being the genre and the cycle. The film genre, Cavell says, is a medium insofar as no film genre can ever be traced back or be defined through a more or less closed set of qualities, be it a set of characters, a historical or background setting, or more or less definitive types of actions and episodes, or decorum. A film, according to Cavell, belongs to a genre not because it shares qualities and elements with other films of the same genre, but because it participates in the discussion about this genre, leaving out some even potentially essential genre elements and adding others, or developing new variants, and deformations and transformations. A genre is not a list of categories or qualities but a medium by which new categories and qualities can be developed or discussed.[16]

A cycle, on the other hand, is based upon a fixed ground, a scheme, a closed list of elements and a diagram of their ordering and its possible variants.[17] If all variants are explored and unfolded, the cycle is closed. The single films of a cycle are tokens in relation to the underlying scheme which is the type. In this basic dichotomy as established by Cavell, we can once again clearly see the traditional contrast mentioned above between closed repetition, or simultaneity, and difference, or successivity and evolution. Now while in film, Cavell asserts, we

14 Cavell, Stanley: "The Fact of Television," in: William Rothman (Ed.), *Cavell On Film*, Albany: State Univ. of NY Press 2016, pp. 59-86.

15 Ibid., pp. 65-71.

16 Ibid., pp. 65-68.

17 Ibid., pp. 68-70.

have the tension or duplicity of these two forms, genre as medium on the one hand and cycle on the other hand, in television, the genre as medium does not exist. On television, everything is arranged under the domination of seriality, but TV seriality is reduced to and practiced exclusively as repetition of the first, of the reproductive type. As video artist Les Levine once put it, everything on television is the repetition of everything on television.[18]

According to Cavell, this does not necessarily mean that blueprints or schematic patterns exist in advance of everything happening on television. Cavell is not a theorist of simulation in the Baudrillardian sense.[19] Mostly, the blueprint is unknown even to those who produce the individual shows or episodes, and the show sequence is often designed just to find out what the blueprint might be (by producing masses of variants). One could possibly analyze this interesting procedure by reading it in the light of Umberto Eco's difference of "Intentio auctoris"—which would be the idea of a blueprint in the minds of the creators of a series—and the "intentio operis," which would be the inherent blueprint residing within the episodes, themselves knowing something about themselves, beyond our or the producer's knowledge.[20] Or we might think of the definition of the experiment given by Jean Francois Lyotard in his famous essay on the topic. Lyotard thinks that the experiment in art is a process by which the artist researches the intrinsic laws of the process by which he operates his very research.[21] This is precisely what makes television so interesting. But the moment the blueprint is more or less found, producing still more episodes governed by a now evident rule means just mere reproduction, and repetition, and stagnation.

With regard to computer gaming, one could ask if something similar happens in intra-ludic seriality if we have to overcome an obstacle in a computer game. There is the right solution, but we have to find it by a series of trials and errors. Once the solution is found, the obstacle becomes more or less irrelevant. The difference might be that, according to Cavell, even the producers of a television show do not know the blueprint, but have to find it with the help of the sequence of episodes they produce, while in a computer game, the producers typically

18 See Youngblood, Gene: *Expanded Cinema*, New York: E. P. Dutton 1970, pp. 338-341.

19 Baudrillard, Jean: *Simulacres et simulations*, Paris: Galilée 1981.

20 Eco, Umberto: *I limiti dell'interpretazione*, Milano: Bompiani 1992, p. 75, pp. 176ff.

21 Lyotard, Jean Francois: *La Philosophie et la peinture à l'ère de leur experimentation*, Leuven: University Press 2012, pp. 146-175.

know the solution, and the users are the experimenters in a game where a prefixed solution already exists, but they do not know it yet.

But, returning to Cavell's article from 1982, he asks why television is submitted to this kind of reproductive seriality, to which end it operates, and why it is so extremely successful.[22] Static seriality, Cavell develops, consists in repeatedly showing the same. Whatever happens in a series is basically the same, namely a reproduction of the same blueprint. The different episodes or events appearing one after the other, the series unfolds in a timely succession, but since every episode is a repetition or a variant of one essential scheme or model, even if it were a model yet to be discovered as such, and hence lying in the future, there is no essential progress in time. The variants, very much like in industrial serial production of commodities, coexist in one extended presence. Neither past nor future exist in an essential mode, the variants only differing accidentally. Hence, time, and change over time, is reduced to a superficial secondary side aspect of everything staying in principle exactly the way it is and has always been.

And this according to Cavell is a protection against the insight that the world fundamentally changes (and rapidly so) to our disadvantage as human beings.[23] Every day, the world is becoming more and more inhabitable, Cavell says, and to ignore this undeniable fact, we use television and its seriality to transform the existential changes of our habitat into a mere sequence of accidental variants simply illustrating an essential stagnation. Via television, we do not look at the world, we do not watch it, nor observe it, we do not even view it, rather we merely monitor it, and by monitoring it and having all the monitored images essentially in one time, simultaneously, even if seen in a sequence, we try to secure that nothing of importance happens, very much like in video surveillance.[24] For the computer game, of course, we could ask the same question.

4.

One could now easily criticize Cavell's view for its rigid dichotomization and simplicity, and just hint at the well-established difference of episode series and continuous serials on television, and at the manifold of mixed forms and itera-

22 S. Cavell: "The Fact of Television," pp. 82-84.

23 Ibid., p. 841.

24 Ibid., pp. 84-85.

tions between them, and even completely new forms that deal with time in yet another manner. For Cavell, serialization of the static type and of the dynamic type exclude each other and form a strict alternative; not to speak of the necessarily underlying assumption that it is possible to discern between the essential and the accidental, the relevant and the irrelevant, which is a highly disputable philosophical assumption that been attacked fiercely by deconstructionist and other post-structuralist approaches.

Among those alternative concepts opposed to the traditional strictness of distinction between the essential and the accidental, Gilles Deleuze proposes a philosophy of repetition and serialization figures. In his 1967 book *Logique du sens*, Deleuze develops the idea that serialization is the underlying dynamic of all modes of sense making, sense production and circulation.[25] In the famous fifth and sixth chapters of his book, after having studied different fields of serialization as driving forces of cultural processes, Deleuze, under the headline "Du sens" and "Sur la mise en séries," investigates seriality as such.[26] He also starts from the assumption of a dichotomy of a repetition model and a difference model of seriality, but he ascribes a very specific meaning to these terms. The repetition model for him is a sequence of mechanical reproductions, or, to be precise, a regular and formal interpunction of the flow of time, such as measuring time by a clock. All moments are defined by their relative position to one another in their sequence, but they are all purely formal and equally shaped at equal distance to one other. They build up the formal grid that allows for repetition to occur.[27]

On the other hand, there is, according to Deleuze, an irregular sequence of unrelated and more or less sudden incidents which emerge without any causality, continuity, and coherence. They are defined not by the point in time when they occur, but by what occurs, and by the emerging and sinking back again of what happens, and by the difference they create between their before and their after.[28] Mutations in evolutions or catastrophes could serve as examples as could unplanned emergent effects of technologies or social forces. Of course, Deleuze takes this version of the two basic principles of serialization from his reading of Bergson's *Matter and Memory* with the distinction of mechanical time and living time, the further reduction of time to space, very much in the sense we have analyzed before, and the latter building up "duration" as a form of time being irre-

25 Deleuze, Gilles: *Logique du sens*, Paris: Minuit 1969.

26 Ibid., pp. 48-56.

27 Ibid., pp. 41-53.

28 Ibid., pp. 42-44, pp. 261-263.

ducible to space and allowing for creativity and evolution in and of the living being.[29]

But Deleuze goes beyond Bergson by not favoring one of the two nor rejecting either option. On the contrary. These two series, one repetitive, one differential—even if completely separate from each other and not communicating—cooperate nonetheless; they intersect and overlap and cross each other without influencing or changing each other. By doing so, they generate a third series of unprecedented and unrepeatable irregularly occurring events which pop up every time the two series, crossing the same temporal universe, intersect and punctuate each other. Notwithstanding their irregularity, these meta-serial events do relate to each other, forming what Deleuze calls another series of a third mode. Time and duration, the mechanical and the living, the organic and the machinic, are always intertwined. There is a third, an anorganic body which supersedes even the human—non-human delimitation.[30] To be more precise, this third type of series is what Deleuze calls a series at the outset, and what can effectively be observed in art, in thought, and other fields of sense production and circulation, and from which only by analysis the two founding types of series can be deduced. In this sense, the third type of series is paradoxically what emerges from and what unites the two others, but without being proceeded by them.

Oliver Fahle has illustrated this concept by referring to television serials and especially to the *CSI* series.[31] He shows that the series of pivotal epistemic moments in *CSI* which leads via errors and deviations to the final insight, to the reconstruction of the crime and the identification of the suspect, can be decomposed into a more or less unpredictable interplay of routine and stagnation on the one hand, and sudden interceptions, often from an unnamed outside source, on the other hand. Moreover, the two sub-series generate specific types of images: The surface level images of pale dead bodies lying in a forensic laboratory on the one hand, and the rapidly moving, computer generated simulations of the insides of corpses which follow the path of the poison through the blood vessels

29 Deleuze, Gilles: *Le bergsonisme*, Paris: PUF 1966 and Bergson, Henri: *Matière et mémoire*, Paris: PUF 1896.

30 Ibid., pp. 48-49.

31 Fahle, Oliver: "Im Diesseits der Narration. Zur Ästhetik der Fernsehserie," in: Frank Kelleter (ed.), *Populäre Serialität: Narration – Evolution – Distinktion. Zum seriellen Erzählen seit dem 19. Jahrhundert*, Bielefeld: transcript 2012, pp.169-181, pp. 177-179.

or the intrusion of the projectile leaving deadly damage to organs or bones.[32] Deleuze's concept (contrasting sharply with Cavell's) keeps, transforms, and finally transcends the dichotomous model of differential and repetitive seriality. Perhaps it is worth asking if Deleuzian seriality is at work in computer games, too. In time-critical games, for instance, the tension between time mechanically running down and the actions of the gamer could possibly be described in that way. We could not discern the chain of attempts and the sequence of successes which in their unrelated relation, and hence in their emerging third form as series, create the course of the game.

5.

If we turn again from intra-ludic seriality towards para-ludic seriality, towards remediation, transmediality, and the evolution of media, we can ask how this series works. Doing so, we switch back from the question "what is seriality" to the very serious question "what is a game". A game, says Ludwig Wittgenstein in a very prominent paragraph of his *Philosophical Investigations* published in 1953, cannot be defined by a list of categories or essential qualities.[33] If we look at examples of what is classified as a game, we will find not one single quality that is shared by all examples. Some games might have features a, b, c, d, others might show e, f, g, h. What makes a game a game is not a definition, says Wittgenstein, but family resemblance.[34]

This holds true, Wittgenstein claims, beyond the realm of games. Concepts of any kind in general are families that form a more or less loose group not by strict definition but by resemblance, not by essence, but by appearance. The fact that Wittgenstein develops his concept of family resemblance by referring to the game is not merely coincidental. The concept of the game is crucial for his whole idea about language and logic, and the question of what a game might be is one he himself, relying so deeply on that very concept, has asked. Members of a family are linked to each other by the fact that they share features with some members, and others with others, and that even members who do not share a single feature belong to the same family, provided there are intermediate mem-

32 Ibid., p. 179.

33 Wittgenstein, Ludwig: *Philosophical Investigations*, London: Blackwell 1953, pp. 32-34.

34 Ibid., p. 33.

bers who share both, such as member c, d, e, f could refer to a, b, c, d on the one side, and to e, f, g, h on the other side.[35]

Going back to the problem of seriality, we encounter two interesting points. The first point is that Wittgenstein's family resemblance is clearly the background of Cavell's idea of the genre (or seriality) as a medium. What makes a family a family, a genre a genre, and a series a series, is not a set of essential or shared qualities, but the mere operation of handing down and handing over qualities from one element to the other as well as the discontinuation of qualities and the addition of new ones. In this Wittgensteinian sense, a family is a series, and a series can be described as a family, the episodes or incidents within the series being related to each other by exactly the same procedure of continuing something and interrupting something else. This is why the cliffhanger in television series is such an important device, because in the cliff hanger, the mere handing down and not handing down of whatever features, of even completely irrelevant chains of action is thematized and brought to attention.

The second interesting point is that Wittgenstein refers neither to space nor time, neither to synchronicity nor successivity. The handing over/not handing over of features might happen in time as well as in space or in aggregations of the two. Members of a family may be ordered in a genealogic chain in time and history or in synchronic order.[36] Going beyond Wittgenstein, hopefully not too far, one might even say that family resemblance is the precondition for the (potential) distance between genealogy and coexistence. Wittgenstein's family resemblance shows that the series does not operate either in space, as repetition, or in time, as difference, nor in correlations of space and time. Instead, seriality lays the ground for space and time to be distinguishable from one another. The same holds true for the basic dichotomy of reproduction and creativity. In terms of seriality, this distinction simply dissolves or is reduced to a status of a secondary level or step.

So, coming back to computer games, this means mainly two things. First, concerning para-ludic seriality as a mode of remediation and media evolution,

35 Bambrough, Richard: "Universals and Family Resemblances," in: *Proceedings of the Aristotelian Society* 61, Hoboken: Wiley 1960-1961, pp. 207-222.

36 Richtmeyer, Ulrich: "Vom Bildspiel zum Sprachspiel—Wie viel Kompositphotographie steckt in der Logik der Familienähnlichkeit," in: Volker A. Munz/ Klaus Puhl/ Joseph Wang (eds.), *Papers of the 32th International Wittgenstein Symposium*, Kirchberg am Wechsel: ALWS 2009, http://wittgensteinrepository.org/agora-alws/article/view/2828/3380.

we may now say that we do not have to conceive of media evolution as a process in historic time only. In media evolution, seen as a serial process and hence as family resemblance, there is no necessary linear time arrow. Older and newer media coexist as does a game alongside a GIF, a t-shirt, another game, a feature film, a television show, a Let's Play video, a YouTube clip which build up a family by resemblance.

Second, turning back to intra-ludic seriality, gaming could mean building and maybe sharing an experience which is neither marked by the definition and demarcation of a specific space (a playground or playhouse from which the real world is excluded) nor the suspension of time, as traditional philosophy of the game often sees it. The gaming experience, precisely because of its profoundly serial characteristic, opens up and operates within a primordial resemblance which undermines the ever-present distinction of simultaneity and successivity, of space and time, and of reproduction and creativity. If this were true, a game like TYPE RIDER would not only lead us potentially from a reproductive to a creative practice of serialization, but it would render an experience of repetition and difference that, resembling the early example of technically suspended distinctions of time dimensions quoted at the beginning with Carl Stichweh's second touchdown in 1963, doesn't even need the difference of repetition and difference.

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Games That Play People

The Facts in the Case of D. Cronenberg

BERND HERZOGENRATH

In 1845, Edgar Allan Poe published "The Facts in the Case of M. Valdemar" in the *Broadway Journal*. The piece was a hoax—it never claimed to be a fictional text, and many readers believed it to be true.

In this short story, an unnamed mesmerist narrates the account of how he conducted an experiment in which he mesmerized (or: hypnotized) his friend, the writer Ernest Valdemar. Valdemar suffers from incurable tuberculosis, and both agree that Valdemar should be hypnotized at the very point of his death. When the mesmerist receives a letter from Valdemar, that he only has 24 hours to live, he sets up the experiment and hypnotizes Valdemar precisely at the moment of death—Valdemar, in trance, first reports that he is dying and then, that he is dead. The mesmerized corpse is left in this state for seven months, with the narrator/mesmerist visiting Valdemar on a daily basis. In this trance state, there is neither a heartbeat nor pulse in the corpse. However, Valdemar responds to questions, and at one point, when the mesmerist wants to awaken him, but unsuccessfully so, Valdemar cries "For God's sake—quick!—quick!—put me to sleep—or, quick!—waken me!—quick!—I say to you that I am dead!"[1] When the mesmerist is finally successful (or seemingly so) and manages to awaken Valdemar from the dead, his body "within the space of a single minute, or even less, shrunk—crumbled—absolutely rotted away... Upon the bed, before that

1 Poe, Edgar Allan: "The Facts in the Case of M. Valdemar," *American Studies at the University of Virginia*, http://xroads.virginia.edu/~hyper/poe/fact.html

whole company, there lay a nearly liquid mass of loathsome—of detestable putridity."[2]

Just as Poe's story straddles the cusp between fiction and "fact" (in a cultural climate that had only recently tapped into Mesmerism, electromagnetism and spiritualism), Valdemar is situated between life and death, the solid and the liquid. The 19th Century in which Poe composed his story saw the simultaneous (and interrelated) evolution of two "founding" mediums, one material, and the other spiritual,[3] of electromagnetic and other-worldly communication technologies. Not only does Poe's story seem to for the first time introduce the "pause"-function in the time-shift recording of life, so to speak—from a more fundamental point of view, it also comments on the two registers of what Gilles Deleuze calls "the actual" and "the virtual". In the state of trance, Valdemar seems to be caught in a limbo-loop of endless virtualization that only the break of the trance is able to bring to a final actualization, which also transfers Valdemar's body from a solid into a liquid state. But the "virtual" I am referring to here is of a different brand than the virtual in VR—more about that later.

What Poe presents here can be read as a prototype of the following formula: a "medium" (in the double sense of the word) takes control over "real life" (and death, even) … the reality created by the medium even "over-writes" the "real" reality to such a point that from a certain perspective, the two become indistinguishable—electromagnetic medium-force and life-force become one.

In film, we can see an early super-imposition of two "realities"—albeit in a much more light-hearted manner—e.g. in Buster Keaton's SHERLOCK JR: a projectionist falls asleep, and in his dream enters the projected world and has to adapt to ever changing "diegetic realities" (more examples include the opening credits of Tod Browning's FREAKS, or the museum scene in Dario Argento's THE STENDHAL SYNDROME).

With regard to Vincente Minnelli, Deleuze even claims this "merging of two worlds" as a trademark of his films, as the "just an idea," as the very Minnellian film|thought: his films follow "the obsessive theme of characters literally absorbed by their own dream, and above all by the dream of others and the past of

2 Ibid.

3 Sconce, Jeffrey: *Haunted Media. Electronic Presence from Telegraphy to Television*, Durham/London: Duke University Press 2000, p. 24.

others."[4] Here we encounter an important term—absorption. In fact, according to Deleuze, "Minnelli had made absorption the properly cinematic power."[5]

Absorption is also a crucial term in Johan Huizinga's definition of "play". Huizinga—according to Celia Pearce and Artemesia "the father of ludology"[6]—published his book *Homo Ludens* in 1938, a canonical and important textual point of reference for Game Studies.[7] Huizinga writes:

"This intensity of, and absorption in, play finds no explanation in biological analysis. Yet in this intensity, this absorption, this power of maddening, lies the very essence, the primordial quality of play."[8]

And it is this absorption that even at the close of the 20th Century makes a film scholar such as Colin McCabe (directly quoting Bertolt Brecht's programme notes to *Mahagonny)* refer to the kind of Poesque scenario I referred to:

"This process [of absorption or "fusion with the screen"] extends to the spectator who gets thrown into the melting pot … and becomes a passive (suffering) part of the total work of art. Witchcraft of this sort must, of course, be fought against. What is intended to produce hypnosis, is likely to induce sordid intoxication, or creates fog, has got to be given up."[9]

Following his concept of absorption, Huizinga defines "play" as "a free activity standing quite consciously outside 'ordinary" life',[10] and he stresses both plays and players "which tend to surround themselves with secrecy and to stress their

4 Deleuze, Gilles: *Cinema 1. The Movement Image*, Minneapolis: University of Minnesota Press 1986, pp. 118-119.

5 Ibid., p. 118.

6 Pearce, Celia/Artemesia: *Communities of Play. Emergent Cultures in Multiplayer Games and Virtual Worlds*, Cambridge, Mass./London: The MIT Press 2009, p. 5.

7 Juul, Jesper: *Half-Real. Video Games between Real Rules and Fictional Worlds*, Cambridge/London: The MIT Press 2011, p. 10.

8 Huizinga, Johan: *Homo Ludens. A Study of the Play-Element in Culture*, Boston: Beacon Press 1971, pp. 2-3.

9 MacCabe, Colin: qtd. in Rushton, Richard: "Deleuzian Spectatorship," in: *Screen* 50/1 (2009), p. 48.

10 Ibid., p. 13.

difference."[11] Also the locus of game-playing is marked by its difference from the "real world":

"The arena, the card-table, the magic circle, the temple, the stage, the screen, the tennis court, the court of justice, etc., are all in form and function play-grounds, i.e. forbidden spots, isolated, hedged round, hallowed, within which special rules obtain."[12]

This is where Salen and Zimmerman take their idea of the "magic circle"[13] from—but the radius of that circle constantly widens, extends, encompasses ever more territory. The question, put otherwise, is if Gregory Bateson's "The Message: 'This Is Play' is a reliable, stable (or isolated) frame (of metacommunication), or if this frame is a frame within frames, unstable, semi-permeable?

Let me come back to this term—"absorption"—and contrast it to the term "immersion," so popular with Virtual Reality. Here, immersion refers to the feeling of "being physically present in a non-physical world. The perception is created by surrounding the user of the VR system in images, sound or other stimuli that provide an engrossing total environment."[14]

Richard Rushton, with regard to the "Clash" between Film Studies (in particular of the *Screen*-variety) and Deleuze's film philosophy has pointed out a useful distinction between the terms "absorption" and "immersion". "Immersion," in the digital understanding of the term,

"offers only the option of remaining firmly within the bounds of one's own selfhood. A mode of immersion is one where the film comes to me so as to attract me, arouse me, solicit me; and it can do so only on the basis of an agreement or contract—it can canvass me only insofar as an accord is struck and consent agreed. At all times the immersive situation is one which is provided for me and whose defining presence is to make me part of its raison d'être. In other words, if it is immersive, the film is there for me; not to offer the possibility of my becoming something or someone else, but to offer only the affirmation of the me that is me."[15]

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11 Ibid.

12 Ibid., p. 10.

13 Tekinbas, Katie S./Zimmerman, Eric: *Rules of Play: Game Design Fundamentals*, Cambridge, Mass./London: The MIT Press 2003, pp. 93-99.

14 https://en.wikipedia.org/wiki/Immersion_(virtual_reality) from 14.04.2017.

15 R. Rushton: *Deleuzian Spectatorship*, p. 51.

On the other hand, absorption (and Rushton is taking his cue from Michael Fried) "offers the possibility of becoming other than what one is, of being someone (or something) else,"[16] and it does so by mustering all the powers of affection, hypnosis, mesmerism and witchcraft that cinema (and media in general) has and have at its/their disposal. This distinction, I argue, also parallels the two different states of "virtuality"—the virtual as digital (as in VR) produces an immersive simulation, a pure abstraction, following binary logic, situated in Cartesian space, that is clearly separate from and even opposed to "reality". The virtual that Deleuze refers to, and that is particularly present in his discussion of the time-image, this virtual (or virtuality) refers to the endless and diversified field of potential surrounding each actual moment, a smooth plane in contrast to the ultimately striated space of VR.

Thus, it might be argued that the "game of cinema" cracks open the boundaries of the magic circle, and lets in the virtual that goes beyond the virtual reality of computer games. Films—in particular time-image films in which the distinction between layers of reality (memory, flashback, dream etc.) becomes indistinguishable, thus present not so much a "clash of realities," rather an interlacing of realities.

So, let's finally move to David Cronenberg's VIDEODROME and EXISTENZ. In VIDEODROME (1982), we see Max Renn, owner of Civic TV, falling for and getting addicted to a strange video signal that opens up a televised world of sex and violence. The name of that signal is Videodrome, and it is the accidental invention of a media prophet named Brian O'Blivion, an enigmatic character who only appears on television screens. The Videodrome signal ultimately causes a fatal tumor to grow in the brain of the viewer, which in turn causes bizarre hallucinations. In Brian O'Blivion, who after his death only has a "media existence," we witness the return of Poe's M. Valdemar, sending signals from that state of "media limbo" he is in. The "mediated world" of VIDEODROME, Renn's hallucinations, and "reality" become indistinguishable, layers upon layers, "frames" intersecting with other "frames"—and the frame actually becomes part of the picture.

Renn virtually "becomes" a VCR player/recorder device, one that simultaneously records his hallucinations and plays them to himself—a moebial topology that fuses structure and narrative, inside and outside, virtual and actual—"this is some spooky shit we got here," as David Lynch would have it.[17]

16 Ibid.

17 LOST HIGHWAY (USA 1997, D: David Lynch)

EXISTENZ (1999), Cronenberg's most outspoken take on computer games and VR is nonetheless not so much concerned with the V in VR, but rather the concept of the virtual in the Deleuzian sense, that is, potentialities of reality that might never be actualized, but are there, lying in wait …

EXISTENZ the film is like a computer game not in terms of its visuals (it does not give you a state-of-the-art VR look—far from it!), but it emulates a game logic by way of its architecture (the "logo" that is the film title, the different "levels" of the game [or gameS], system breakdowns, non-sequiturs, etc.) and its stilted dialogue, a characteristic of games that Eddo Stern has charmingly described as the "autistic conversational algorithms"[18] of game characters.

At a crucial moment in "playing the game" EXISTENZ, Ted Pikul announces: "EXISTENZ is paused!"—and EXISTENZ is paused.

Whereas in Poe's Valdemar, life is "paused" by a medium, in EXISTENZ, the medium is paused … after this scene, after Ted Pikul has paused the game, Allegra says, "There's nothing happening here, we're safe, it's boring." To which Pikul replies, "It's worse than that. I'm not sure that here, where we are, is real at all. And you … you're starting to feel like a game character." At this moment, "something has slipped over the edge"[19]—EXISTENZ is a game that plays people.

Speaking of the function that connects Poe's Valdemar to EXISTENZ in a moebial logic—in VIDEODROME's sex sequence between Max and Nikki Brand, we also witness not so much a pause but a slowing-down that also opens up the indistinguishability between what is real and what is televised.

Thus, if we can claim that the actualization of the virtual brings its endless play of possibilities to a halt, the different attempts in Poe's *Valdemar* and Cronenberg's VIDEODROME and EXISTENZ to slow down or even pause either "real reality" or "virtual reality" do not actually produce a stable differentiation between these two (or potentially endless) states.

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18 Stern, Eddo: "A Touch of Medieval: Narrative, Magic and Computer Technology in Massively Multiplayer Computer Role-Playing Games," in: Digital Games Research Association, http://www.digra.org/digital-library/publications/a-touch-of-medieval-narrative-magic-and-computer-technology-in-massively-multiplayer-computer-role-playing-games, p. 265, see also: Galloway, Alexander R.: *Gaming. Essays on Algorithmic Culture*, Minneapolis: University of Minnesota Press 2006, p. 68.

19 Keane, Steve: "From Hardware to Fleshware. Plugging into David Cronenberg's EXISTENZ," in: Geoff King/Tanya Krzywinska (eds.), *Screenplay: Cinema/Videogames/Interfaces*, London/New York: Wallflower Press 2002, p. 153.

Thus, my humble claim is that one of the contributions of film to the field of "cineludic aesthetics" is precisely the stress on the indistinguishability between reality and fantasy, between different layers of reality. It is a logic of ludic absorption that is so inclusive that it erases the difference between what is real and what is not, between dreams and reality, even between your own dreams and the dreams of others—to cut a long story short: it offers a concept of the virtual that goes beyond virtual reality, that opens play and playfulness in such a way that the magic circle gets porous, to say the least. This porousness, this opening up of VR to a more fundamental virtual is something that Pervasive Games are tackling at the moment.

In stressing this moment of indistinguishability, this cinematic topologics (or even topoludics) creates a kind of intermediary space, some kind of interzone.

Sometimes we say "there is too much play in something" … play here in the sense of "space for movement" … a screw that has too much "play" does not really fix things … so "play" might also refer to as a dynamic of "in-between," a space of endless movement between (seemingly) stable points and lines of a frame that eventually becomes part of the picture and play.[20]

Are we still in the game?

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20 See also: Astrid Deuber-Mankowski/Reinhold Görling (eds.), *Denkweisen des Spiels. Medienphilosophische Annäherungen*, Wien: Turia + Kant 2017.

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THE STENDHAL SYNDROME (IT 1996, D: Dario Argento)
VIDEODROME (CA/USA 1983, D: David Cronenberg)

Abu Goat

REMBERT HUESER

Opposite the place where the Cyclopes live in Homer's *The Odyssey* there is an island that holds a promise:

"Now there is a level isle that stretches aslant outside the harbor, neither close to the shore of the land of the Cyclopes, nor yet far off, a wooded isle. Therein live wild goats innumerable, for the tread of men scares them not away, nor are hunters wont to come thither, men who endure toils in the woodland as they course over the peaks of the mountains. Neither with flocks is it held, nor with ploughed lands, but unsown and untilled all the days it knows naught of men, but feeds the bleating goats."[1]

Or, to make a long story short: on the other side of monocular vision, you will find the wild goats. If you want to reach out to them, to live the dream of the kick-ass goat of the free, you need a strategy. The trope of the renitent goat set against a two-dimensional view which is incapable of thinking the logic of particular spaces begins in antiquity.

You know how the story goes: It was Kirk Douglas who caused havoc for the overlooking eye of surveillance. In a famous reenactment of the primal scene of roaming free in 1955, he takes his animal avatar, the goat, to his ship to reach the next level. The following questions remain: How do we deal with the promise of the wild bleating goat? What is a goat anyway? How might we understand it/make sense of it?

1 Homer: *The Odyssey*, translated by A.T. Murray, New York: G.P. Putnam 1927, p. 311.

Figure 1: Goats in a Tree

Source: Screenshot Bill's Channel: 12 GOATS IN A TREE—real or fake? 2013, YouTube, accessed January 15, 2017. https://www.youtube.com/watch?v=UJSGu3BdhOM.

The answer is not just a matter of the family tree. There are certain key elements that one has to piece together in order to get a goat that holds its ground. One has to be aware of its properties, abilities and the special knowledge that it possesses. And, of course, it is never too late to further expand the concept—to earn or buy additional strengths for our personal goat. What are the basics that we have to know?

Let's jump straight to the end of the 19th century, to Chicago, to A.N. Marquis & Company, to a milestone of classificatory goat knowledge. In 1895, a time when electrical engineering made its greatest progress and the year in which cinema is supposed to have originated, the U.S. publishing house edits a translation of the third German edition of *Mammalia*, the first volume of Alfred Edmund Brehm's *Life of Animals: A Complete Natural History for Popular Home Instruction and for the Use of Schools*. Starting on page 448, the classic text reserves eighteen pages in double columns to the third family of the ruminants, the horned animals, in which sheep and goats are closely related. Apart from their overall characterization as being "active, lively, restless, intelligent and sportive animals which incessantly run and gambol"[2]—to be competitive in this strange world of man, objects and maps—five additional features of a goat are of importance:

1. Goats love to fight:
   "The splendor-loving Romans frequently brought one to two hundred goats that they had caught alive to the fights at the *Colosseum* in Rome."[3]

2 Brehm, Alfred Edmund: *Brehm's Life of Animals. A Complete Natural History for Popular Home Instruction and for the Use of Schools Volume 1: Mammalia*, Translated by Pechuel-Loesche and Haake, Chicago: A.N. Marquis & Company 1895, p. 451.

3 Ibid., pp. 449-450.

2. Goats can be found in the landscapes of the sublime:
   "They are free from dizziness, and they stand on the narrowest ledges and with apparent indifference gaze into the most terrible abysses."[4]
3. Goats can turn into monuments:
   "According to Berthoud von Berghem, whose accounts are still accepted as authentic, all males that are over six years old retire to the highest spots in the mountain, lead a more and more solitary life and finally become so insensible to the severest cold that they will sometimes stand on the highest peaks with their faces turned against the storm, motionless as statues, as a result of which they not infrequently get the tips of their ears frozen."[5]
4. Goats can jump:
   "It plants its hoofs so firmly and securely that it can keep its hold upon the smallest spots of standing room. Schinz has observed and interestingly recorded with what precision these animals reach the spots at which they aim. A young Bouquetin in Berne sprang voluntarily and without having been pursued, alighting on the head of a tall man, and kept its place there with all four hoofs. Another was seen to stand on all four feet on the top of a pole, a third stood on the narrow upper edge of a door and mounted a vertical wall without any other support than that formed by the projections of the bricks, at such joints as had been denuded by the falling off of mortar."[6]
5. Goats stink:
   "Another feature characteristic of these animals, is the powerful, rank odor, with which all goats afflict our sense of smell."[7] And, last but not least—we already had this—goats ruminate. They are built on repetition. They are never done with incorporating things. They go through objects again and again. They think them through and spin them around.

With this little toolbox for future strategies in mind, so much is clear: We don't have to obsess too much about the way our bodies may actually look and how close they are to fulfilling our wildest goat dreams. Nor whether they manage to release our inner 'nomad-goat' in the end. Being a goat is closer to conceptual thinking. But, as always, in order to unlock the mutators that we will find attractive on the way and that we will check out, we will have to be attentive and play

4 Ibid., p. 450.

5 Ibid., p. 451.

6 Ibid.

7 Ibid., 448.

hard. Once we have entered into one of the mods of the GOAT SIMULATOR game, we can change the shapes, the outfit and the moves of our goat on the fly. We can, for instance, reload and beef up our meager, initial five-goat option as an Anti-Gravity Goat, a Tornado Goat, a Space Goat, an Artsy Goat, a Robot Goat or a Stoned Goat. But we can also modify our goat in other ways, making it a Tall Goat (which would probably be called a giraffe in other worlds) or a Feather Goat (which looks like an ostrich to me), a Classy Goat (which could star in MARCH OF THE PENGUINS), a Shopping Goat (which is usually pushed around at the local supermarket), or, last but not least, a Giant Goat (which is not white, but otherwise looks like what is hidden behind each page of *Moby Dick*). Each would change our locomotion in significant ways. As of this moment, there is a total of 44 unlockable mutators in the GOAT SIMULATOR and an additional three locked mutators. Indeed, in the course of the game, "a goat can ride a bicycle"; "a goat can wear [up to seven] hats"; "a goat can get giant body parts by licking mushrooms."[8] With our goat as the accomplished demolition specialist that it is, various spatio-temporal relationships can be overcome and transformed.

At the beginning of the 20th century, the reputation of the goat was beyond dispute.

As was expected, the sheepish Kirk Douglas—who clung underneath a sheep instead of riding it to escape from the cave—had taken his ship from the island of the cyclopes back home to the Paramount Studios on Melrose Avenue in Hollywood. The goats went ashore in Southern California and settled down at the Silver Spray Pier with its famous Jackrabbit Racer roller coaster on the Long Beach Pike, where they made their living by renting out goat carts for travelling around.[9]

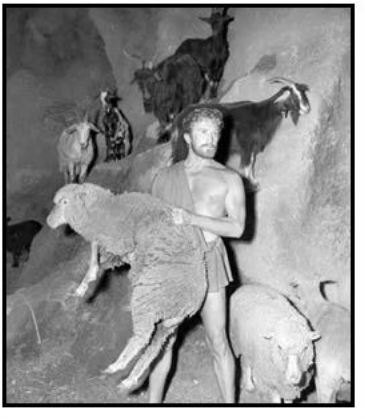


Figure 2: Goats in the Movies: Still from the Set of ULYSSES. July 16, 1953[10]

8 http://goatsimulator.gamepedia.com/Mutator

9 Bengtson, John: "Meet Buster in Goatland at the Silver Spray Pier," in: *Chaplin-Keaton-Lloyd film locations (and more)*, April 16, 2011, https://silentlocations.wordpress.com/2011/04/16/meet-buster-in-goatland-at-the-silver-spray-pier/

Figure 3: Goatland

Source: "The Cook. USA 1918. Roscoe Arbuckle and Buster Keaton." Youtube. Accessed January 15, 2017. https://www.youtube.com/watch?v=EBzlMKlWTg4. Screenshot

With goats in front of you, following the lead of the goat, one can explore landscapes, enter unchartered territory and remove obstacles. But one always has to be on alert. In THE COOK from 1918, Buster Keaton is already falling from those wild goat carts from the start. Goat rides have never been safe. Quite on the contrary, they have been prone to collisions. How many goat carts have crashed over the years, how many 'goat-engines' fought each other and what might they have run over during their rides—none of this has been recorded.

In the major North-American metropolitan areas, the idea of the goat became somewhat abstract after World War I. In 1921, Buster Keaton makes a two-reel film, which is called THE GOAT, although it does not feature a single goat. For Buster Keaton, this is common practice: "THE LOVE NEST (1923) isn't about a love nest, THE NAVIGATOR (1924) isn't about a navigator, THE GENERAL (1926) isn't about a general, and while there is a butler in BATTLING BUTLER (1926), the butler isn't the one that battles."[11] In this film, it is Buster Keaton himself who

10 Source: Jim Pringle. *Bismark Tribune*. December 8, 2016, http://bismarcktribune.com/july/image_6bf58c75-4646-59ca-a26b-c86586395aeb.html, accessed January 15, 2017.

11 Kalat, David: "The Goat (1921)," in: *TCM Film Article*, http://www.tcm.com/this-month/article/430451%7C0/The-Goat.html

simulates the goat that is sent into the wilderness (which happens to be an ordinary major city here) with all the sins of society laid on its head—quite literally how Leviticus 16:22 has described the ritual. Still in 1922, and more and more so, as the sins keep piling up, the need arises to send a goat to the desert to make up for the sins of the West. The point of departure in THE GOAT is what film is made of, the basis of the take, the single shot, 1/24th of a second: photography. Taking a photograph is shown in THE GOAT as a scene of projection. Photography is shown as film. Because of the laborious time of preparation for a shot, both the objects in front of the camera, the figure and the ground could easily change places. At each particular spot we are always already one image further ahead in time. At the interface of various types of knowledge production that manifest in various inscriptions in the body, the film makes fun of the trace of the body that disappears, or what happens when the lights go out and the picture gets developed. Mixing up bodies in front of the camera for a mugshot in a police station is bad news for visual evidence.

Figure 4: The Goat in Hollywood

Source: Screenshots: "The Goat. USA 1921. Buster Keaton and Mal St. Clair." 2011. In: Buster Keaton Short Films Collection 1920-1923. Kino Lorber.

The mugshot of Buster Goat undergoes a number of medial transformations, becoming a newspaper heading and a mural in the form of a wanted poster. The document becomes a film which becomes a simulator game. Against the ubiquity of data capturing and surveillance techniques, only random objects that are lying around on the street, waiting to be picked up, can come to the rescue and disfigure the basic pattern of the image. The player, Buster, an ingenious dilettante, starts various forms of bricolage that help him disguise the alleged evidence linking his body to the crime. The task for Buster, the cityscape or landscape goat, is learning to scrutinize his environment to find tools for the future

that, first of all, are capable of destroying the master narrative while still remaining in the game.

"Throughout this film, Buster is racing—but getting nowhere. It takes all his skill and speed and ingenuity just to stay in place [...]. Buster's keyed into that mechanistic fate just well enough to spy the escape routes no one else sees. Speeding trains, amazing stunts, breathless chases, special effects, and armies of angry coppers."[12]

One of the main narratives of mechanical and electrical engineering in the 1960s (and now, my actual prehistory of goat simulation gaming begins) is the building of the big dams. In 1959, the Siemens company shoots one of the most successful, award-winning industrial films: IMPULSE OF OUR TIME. To show the global success story of electrical engineering—how the technology of the West brings future as such to the Third World—the company from Munich has film crews not only travel to 34 countries around the world for eight months, it also commissions an electronic soundtrack composed by famous avant-garde composer Alois Riegl in the new Siemens Studio for electronic music.[13] It takes an entirely new soundscape to understand the magnitude of change that Siemens will bring to the world.

In the movies, the potential of sound and bleating goats always went hand in hand. For the implementation of the talkies in Hollywood, they were key.

"Often films which had been completed (and sometimes released) as silents were retrofitted with music, sound effects, and perhaps a little post-dubbed dialogue. The majority of 1928 sound films fell into this category: THE KING OF KINGS (the nationally distributed version of the 1927 silent), THE GODLESS GIRL, and WHITE SHADOWS IN THE SOUTH SEA are examples. The skeptical press disparagingly referred to these as 'goat glands.' This slang term derived from outrageous cures for impotency practiced in the 1920s, including restorative elixirs, tonics, and surgical procedures. It implied that producers were trying to put some new life into their old films. Paul Fejos's LONESOME (1928) for example, had been previously released as a silent film, then reissued with a scene wherein Glenn Tyron

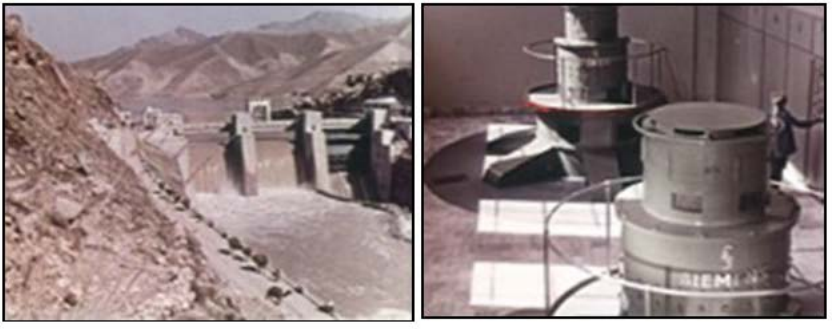
12 Kalat, David: "The Goat (1921)," in: *TCM Film Article*, http://www.tcm.com/thismonth/article/430451|0/The-Goat.html

13 Kinter, Alexandra: "16. Oktober 1959—Unternehmensfilm *Impuls unserer Zeit* uraufgeführt," in: *Siemens History*, https://www.siemens.com/history/de/aktuelles/impuls_unserer_zeit.htm

and Barbara Kent exchange some banal lines in bland voices about the color of their fantasy dream house."[14]

The magic of cell and tissue transplantations of goat testicles, in particular, was accomplished with the help of radio pioneer John Romulus Brinkley who practiced as a doctor in L.A. without ever having obtained a medical degree.[15] Engineers began to dream of celluloid goats. It would take some balls and a goat, goat balls, to finally hear the sound of the white western male's proudly projected technological future for the world. By the 1960s this was no longer enough. The task was to come up with a new electronic sound of progress. Siemens's sublime turbines were gambling with the future.

Figure 5: No Goats



Source: Screenshot IMPULS UNSERER ZEIT (D 1959. Otto Martini. 1959. Siemens AG, Corporate Communications)

"An ancient caravan route that connects Persia and India. Landscape of rocks in Afghanistan. Here symbols of modern technology too: dam, power plant, turbine. The waters of the river that roll from the Khyber Pass to the plains, no longer emit unused. The power

14 Crafton, Donald: *The Talkies: American Cinema's Transition to Sound 1926-1931*, Berkeley/Los Angeles/London: University of California Press 1999, pp. 168-169.

15 McCarthy, Erin: "Penny Lane on 'Nuts!', Her Documentary about 'Goat Gland Doctor' John Brinkley," in: *Mental Floss*, 2016, http://mentalfloss.com/article/74145/penny-lane-nuts-her-documentary-about-goat-gland-doctor-john-brinkley

plant Sarobi transforms its force into electric energy. Seamlessly two ages meet: centuries-old way of life stands next to state-of-the-art technology."[16]

Similar to Buster Keaton's THE GOAT, the Siemens film IMPULSE OF OUR TIME does not feature a single goat. Instead it may very well deserve a chapter of its own in the history of goat hauntology. From today's point of view, it does not take much to see that the various cherry-picked global sites of Western dam-building projects shown in the film are, today, the major sites of political conflict and violence. In this situation, it is the goat that comes to the rescue. IMPULSE OF OUR TIME prepares the map for the resettlement of the goat that has long since disappeared.

Figure 6: Dam Goats

Source: "Dam Overgrazing. JoeProBono," 2011, Imgur, http://imgur.com/n74Jg, accessed January 15, 2017

It does so, and this is what Brehm's *Life of Animals* could not yet know, because a goat loves the side-effects of dams—we already knew that it loves salt and it loves challenges—and it also loves grandiose ancient architecture. And, back again to common knowledge: It loves to give it all a good lick. These are Alpine ibex goats grazing on the Cingino dam in Northern Italy.

The goat and the dam that you see here are part of GOAT SIMULATOR, "the latest in goat simulation technology," according to its makers, the Coffee Stain

16 Kinter, Alexandra: "16. Oktober 1959—Untemehmensfilm *Impuls unserer Zeit* uraufgeführt," *Siemens History*, https://www.siemens.com/history/de/aktuelles/impuls_unserer_zeit.htm

Studios, upon its release via Steam on April 1, 2014. "You no longer have to fantasize about being a goat, your dreams have finally come true."[17]

Figure 7: THE GOAT SIMULATOR

Source: Screenshot Goat Simulator Website. 2014. Coffee Stain Studios, http://www.goat-simulator.com, accessed August 3, 2017

Simulation games usually have a clear function: They analyze, train or predict activities and predominantly help business men, soldiers and anyone who wants to change places with someone else at a given moment. The third-person action GOAT SIMULATOR merges all of this into one and puts a pelt, two horns and a tongue on it. For the studio, it comes quite naturally:

"Goat Simulator is a small, broken and stupid game. It was made in a couple of weeks, so don't expect a game in the size and scope of GTA [Grand Theft Auto] with goats. In fact, you're better off not expecting anything at all actually. To be completely honest, it would be best if you'd spend your $10 on a hula hoop, a pile of bricks, or maybe a real-life Update. Recently the game has been updated to include an MMO component."[18]

As is often the case with games these days, GOAT SIMULATOR also comes with its own encyclopedia: There is the "Official Goat Simulator Wiki" where you can look up main points of interest.

17 http://goatsimulator.gamepedia.com/Goat_Simulator

18 http://goatsimulator.gamepedia.com/Official_Goat_Simulator_Wiki

"The Dam is a location in Goat City Bay. [...] There are a number of crates, gas canisters, and people on the dam, as well as three towers and two unenterable buildings. Next to the dam is a catapult. Getting in the catapult launches the goat across the map—generally to the vicinity of Cabrito Park, but can be used to get to the Concert with proper steering. The dam is immediately to the left of the starting point [...] It is not an accessible place."[19]

The dam—stasis—is at our point of departure for the path of havoc. It's nothing to lean on, but something to keep in mind while we go. The untouchable place of the promise of world-wide prosperity right next to the starting point makes the goat wonder. And wander. The wrath of the goat that is set loose is fueled by the architecture that made the landscape disappear where it was once roaming free. The dam programs the goat and makes it go. The goat is charged up by the dam.

Now, the monumental architecture that is the pride of Western engineering is the symbol of capitalist change that it brought to the world and that we are not allowed to attack. Yet it is matched by another monumental building which turned out to be the surprising winner of the first user-generated E3 Goat Simulator Map Contest: the ancient temple of Abu Simbel. Quite accordingly, the new map is called Abu Goat!

Figure 3: Abu Goat

Source: Abu Goat. A Map for GOAT SIMULATOR. 2016, Lubiterum Game Studio, http://www.lubiterum.com/shots/abugoat_scr_03.jpg, accessed January 15, 2017.

19 http://goatsimulator.gamepedia.com/Dam

Why did players and designers who love to play a pretty basic, funny, third-person demolition game in 2014 come up with Abu Simbel as the no. 1 dream destination to send the goat to in the first place—and thus the place where they want to be and go to work? Is this magic name and central fantasy of my youth (in the 1960s) still around fifty years later? Most of us have probably seen photographs of the famous massive temples of Rameses II at the Nile. They have been an important part of the image pool of Western culture since the 19th century.

"After its rediscovery under a mountain of sand by a Swiss explorer in 1813, Abu Simbel spent much of the nineteenth century being repeatedly dug in and out of sand (including by such famous tourists as Gustave Flaubert and Maxime du Camp). This history of repeated uncovering had even earned the temples a place above the couch in the office of Sigmund Freud, where a David Roberts rendering of the temples was hung to trigger a patient's psycho-archeological introspection."[20]

In short, while we may have seen the place before, we probably have all but forgotten it. It is highly unlikely that the generational story of the 1960s of how Abu Simbel became the symbol of Western modernity, how Western states once easily sawed their alleged architecture of origins into pieces, is still very much around and alive today.

Yet, this story at the very heart of the Abu Simbel myth gets transplanted into the logic of GOAT SIMULATOR, which makes it not just another spin on THE LAND OF THE PHARAOHS, or the series of popular Hollywood roller coaster action-adventure fantasy films such as THE MUMMY, THE SCORPION KING or THE MUMMY RETURNS. This time it's a game. While ancient Egypt might still be one of the key fantasies of set design—mummies, tombs, deadly animals and long-lasting curses—the very particular choice of place turns Abu Goat, intentionally or not (which does not really matter), into an uncanny game that reflects on the very effects of technology and modernity. A game that, similar to Buster Keaton's THE GOAT, revolves around a case of mistaken identity. It is from here that a massive attack on the technological fantasy of Western self-centered, masculine confidence can be launched. Abu Goat logically evolves out of the dam we have witnessed in the original GOAT SIMULATOR map and which sets off a chain reaction. The players who say "dam," also have to say "damned" and succumb to

20 Allais, Lucia: "Integrities: The Salvage of Abu Simbel," in: *Grey Room* 50 (2013), p. 26.

the power of the goat which drags us along, while we (as specialists of destruction) try to steer it toward always new objects. Each object is sized up in advance as a potential site of destruction.

The major UNESCO project "The Rescue of Nubian Monuments and Sites," which protects temples on the Nile (for which Abu Simbel is the symbol) that were threatened by the building of the Aswan Dam, allowed for the very concept of "world heritage" to be scripted and established in the first place.[21] Now in 2014, amidst worldwide political turmoil, the goat that is accustomed to tackling everything, is brought into the game to direct its energies straight at the Western idea of rescue and restoration itself. "Enjoy roaming ancient Egyptian ruins as a mummified goat in this user-submitted map to be showcased at the Curse booth during E3. In addition to headbutting unsuspecting tourists into oblivion, take on a precariously-placed Tyrannosaurus Rex in the latest fan addition to the GOAT SIMULATOR world!"[22] What is it that we want to preserve for the future?

"[T]he temples of Abu Simbel were already mass-produced objects. In a sense the lack of originality in their making only facilitated their ability to be reproduced as a modern monument. In light of these debates, the salvage of Abu Simbel appears as a solution not to the problem of preserving existing cultural value but to the problem of creating a new one. Ultimately the temples of Abu Simbel were saved not in spite of the fact that they were cut into blocks but because they could be cut into blocks while becoming more or less authentic modern versions of themselves."[23]

As for me, I would preserve GOAT SIMULATOR and its Abu Goat map. The goat reminds me that this much is certain: With respect to culture, we are never safe.

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II.4 Game Development Summit

Introduction

BJÖRN BARTHOLDY

Over the past several years, digital games have become a defining force in our global society— not only in technological or economic terms, but also in relation to their aesthetic capacity. This reaches from narrative design to modes of interaction, from ludic patterns to auditory and visual manifestations, among many others. The impact of digital games on our cultural output is so strong that we find traces of their influence all around us. Film and TV content has been affected strongly by game aesthetics; Gamification migrates elements of play into all spheres of daily life; serious games change the way we learn and become politically active; and even contemporary product design picks up elements originating from digital games. We might say that the aesthetics of digital games have become a meta-model of our times, signaling the dissolution of the film and television paradigm.

In the Game Development Summit, we investigated the topics mentioned above (among others) and contextualized this diverse group of concepts within and across broader levels of discourse. In his essay "The Aesthetics of Choice," Klaus Gasteier ponders if it is really necessary to have the power to make decisions in the narrative space of digital games, as structures in non-linear narration seem not to have developed beyond the strategies established in the late 1980s! A complementary perspective is provided in Daniela Kuka's article "Games as a Source of Future Memory." Kuka presents "Future Games" as tools for the strengthening of our capacity to face uncertain futures and wicked problems. These "Future Games" are not designed artifacts; they question the distinction of designing acts and acts of playing, as well as the separation of roles in their development process.

Two other papers deal with sexuality and death in digital games. In "My Hyperideal Self," Nina Kiel examines the idealized and hyperideal visualizations of

our virtual selves in the context of sexualization and objectification. Her analysis results in "a plea for diversification." Michael Erlhoff, design theorist and founder of a design education program without specialization (Köln International School of Design), reflects in his text "Play it again, Sam" on dying in video games (while still being alive) as well as on August Wilhelm Schlegel's idea of the "poetic image," which Erlhoff sees endangered by narrative structures in many digital games.

Finally, Ortwin Freyermuth, co-founder of Cloud Imperium Games (CIG), offers a new industry perspective: He reports and reflects on the advantages (and possible pitfalls) of open game development as practiced in the production of the crowdfunded AAA games STAR CITIZEN and SQUADRON 42 ("Open Development as Disruptive Game Design Praxis").

All five authors put forth very diverse positions and perspectives on the summit topic, proving that the aesthetics of games and play have an undeniably important role in shaping the future of this ever-developing medium.

The Aesthetics of Choice

A Question from the Outside

KLAUS GASTEIER

> "... branching narratives can be counterproductive, as they merely draw attention to the fact that certain choices are not available..."
> BARRY LOWNDES [1]

NOT MY STORY

I usually react allergically these days to digital games that try to make me interact actively in a story setting. They want me to be a character of the story, constantly choose between options, make decisions that lead to sometimes drastic consequences and ultimately affect the outcome of the story (one way or another). While this sounded great in the 80s, it now seems more like a curse. As we live in times where it would feel strange selling narrative computer games without these options and we stopped asking why.

I also never really had fun training the fine motor skills most popular action games demand in order to play them properly, so I was constantly annoyed when most of these games promised some kind of story but usually led me from (pre-rendered) cutscene to cutscene that gave me the next step of the narrative after (hardly) fulfilling action sequences where I needed skills that weren't really connected to the storytelling. So, the framing narrative became just an excuse for

1 Lowndes, Barry: Creating a Narrative Environment—Choice and Consequence in Single Player Games, in: *Enquiry—The ACES Journal of Undergraduate Research* 2/1 (2010).

more first-person shooting/stealth shooting/car driving/ etc. (inter)action, which wasn't my cup of tea.

But this was nevertheless enough for many players to feel immersed in the surrounding fictional world—but not through the storytelling elements. Being first exposed to digital games in the mid/late 80s, fascinated and inspired by the many (then) new emerging concepts, overtime I lost motivation playing mainstream popular game titles. Due to these experiences as a player, I came back as a curious observer some years ago with more of an outsider's view of the genre, related to my actual work and projects.

DO I (HAVE TO) HAVE A CHOICE?

I never really took a side in the 'ludologist vs narratologist' debate, as I'm neither ludologist nor narratologist by profession. And I only write this article regarding those games that intend to tell a story (which are quite a few these days, as most open world games want to tell stories too).

However, when trying to experiment with the combination of interactivity and storytelling in many varieties as artist, designer, and teacher from the early stages of the medium on, I had the growing impression this debate is missing one point. I had the feeling storytelling didn't really work for me when it became interactive through the known ludic ways, be it with or without narratological framing. Could it be there was a bigger problem behind this?

There is an interesting cultural-anthropological viewpoint [2] that we are forced as humans to generate *intermediate worlds of indirectness* in order to access, process, and constitute our real world. This theory also suggests, storytelling—derived from oral culture[3]—always had the function to mediate the need for passing on *experiences of anomalies* (things departing from what we personally, commonly know) by structuring this second hand-experience in a linear, *coherent, non-optional order* that recipients could *easily process*.

Secondly, storytelling has the function to *relieve* us recipients from the *shock of having to directly experience* the unknown, the alien, the deviant—while still making us spread the essence of the message through viral diffusion. This may

2 Düllo, Thomas: *Abwegen und Abschweifen—Versuch über die narrative Drift*, Köln: Verlag der Buchhandlung Walther König 2015.

3 Ong, Walter J.: *Orality and Literacy: The Technologizing of the World (New Accents)*, London: Routledge 1982.

sound anachronistic from a gamer's point of view, in a somewhat radically changed media world, but I can safely assume this is still deeply rooted in us all.

So, concluding and interpreting this theory, storytelling coming from its oral tradition seemingly used to be imperative by *not offering choices* but already making the decisions for us. And anticipating our reaction. That leads me to a naive sounding question directed to those digital games that want me to tell a story through interactivity:

Do I (have to) have a choice?

Which means:

- Do I have the right to feel somewhat stressed by the constant obligation to decide explicitly how the underlying story has to continue?
- And while doing so, did this game really give me the power to steer a story in such a way that it still feels like a coherent—and gripping—story?
- And, would there be any other ways to achieve this, other than branching predefined storylines?

Has a *dogma of choice* slowly evolved when it comes to the current state of interactive storytelling and the fairly established routines of how to interact with the narrative?

Of course, there are really interesting (and intense) examples in contemporary game culture of making us experience things (and the resulting shock) firsthand through conveying moral dilemmas and the drastic consequences of our choices.

But observing digital games that try to tell me an interactive story since the adventure and roleplaying games of the 80s, I have always felt uncomfortable with the resulting standards and requirements of ludic interactivity claiming to be the only way to interact in those narrative structures.

Even passionate gamers—when reflecting on what they are doing—seem to agree that there is something deeply flawed in the narrative structures of popular digital games—while they also willingly embracing the addictive, immersive and powerful agency structure offering control of this (still) flawed narrative setting.

Somehow interactive storytelling became synonymous with the element of narrative choice (and the obligation to render decisions) to control active participation in that story, and the branching narrative became its mainly known (but

flawed[4]) form—until the speculated arrival of truly procedural narratives (which is still debatable).

In my view this development has shaped user behavior and in turn it has established expectations the game industry has then tried to fulfill—not by solving the underlying problems but by giving the user access to more powerful and fancier-looking means of control (which don't really offer true control over the story in a narratologically convincing way).

This leads to something I would like to call, in a non-visual appropriation of the term, 'aesthetics of choice': layers of interactivity applied to whatever lies beneath, promising author-like control as its own defining, inherent aspect of gaming culture.

All this is certainly important and justified from a ludic perspective, but it might obscure the fact that something in human nature still longs for stories to be told, not played. And of course, we cannot deny the paradox of how much fun it is to playfully interact in fictional story worlds regardless of the quality of our narratological influence.

IN THE BEGINNING, A PORTAL TO FICTION

With the advent of home computers as digital game platforms in the mid- to late 80s most computer users were confronted for the first time with the possibilities and concepts of interactive digital entertainment as media. There were the early (great) text adventures like the Infocom series (i.e. ZORK[5]), digital role playing games like THE BARD'S TALE[6] and early graphic adventure games like ZAK MCKRACKEN[7] that tried to use the computer to immerse us in multi-layered, conditional, branching narratives, spicing it up occasionally with the nuanced humor and inventiveness probably only a new media shift can produce.

When those first approaches and concepts emerged, hypertextual, non-linear branching narratives seemed like a big step, already forming the promise of then

4 Lowndes, Barry: "Creating a Narrative Environment—Choice and Consequence in Single Player Games," 2010, http://research.shu.ac.uk/aces/enquiry/index.php/enquiry/article/download/15/27

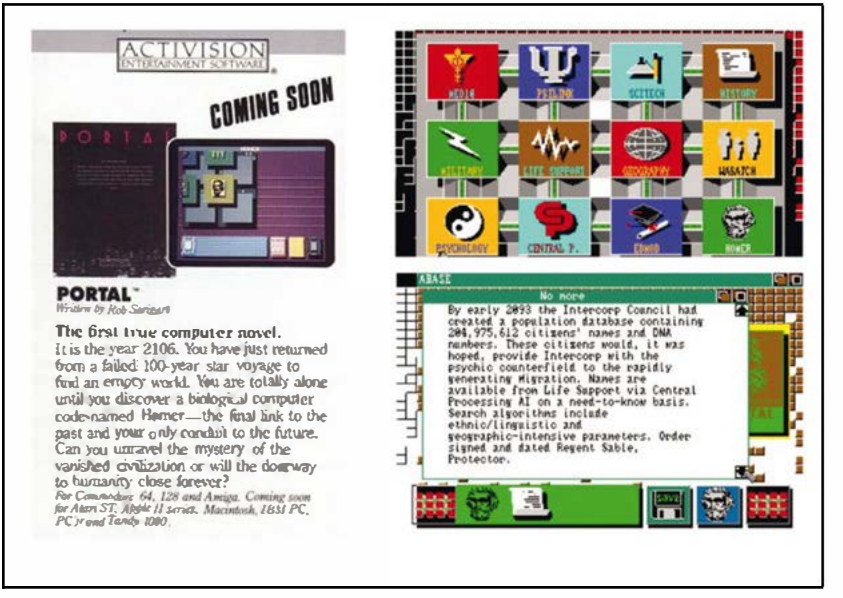
5 ZORK (Infocom 1980, ●: Infocom)

6 THE BARD'S TALE (EA 1985—2005, ●: Interplay Productions/InXile Entertainment)

7 ZAK MCKRACKEN (Lucasfilm Games/Softgold 1988, ●: Lucasfilm Games)

new buzz words like 'Interactive Movies', even with a game studio naming itself 'Cinemaware' in 1985.

Figure 1: PORTAL, *1986*



Source: Screenshots & Packaging

But in 1986 there was a little project that differed from most of the other approaches. It was an obscure game called PORTAL[8] by Rob Swigart, published by Activision (not to be mistaken with the more recent and also great PORTAL[9]-Series from Valve). It was focused on telling the mysterious story of a nameless space traveler coming back to earth after 100 years in cryogenic sleep to find earth completely deserted of human life. A waking AI, still shaky and trying to remember what happened, pointed the protagonist to the increasing number of recovering databases of the reactivated earth communication network "WORLDNET," so that the game player as fictional database interface user could explore him/herself what happened.

Thus, it was also called a "Dataspace Retrieval" and had a very unique and simple system of game play as well as interface. Back in the day, when nearly

8 PORTAL (Activision 1986, ●: Nexa Corporation)

9 PORTAL (Valve 2007, ●: Valve/Kim Swift)

every game was unique because it had no predecessors, that was nothing unusual. But even then, PORTAL was different.

By chance it was the first interactive narrative I ever 'played,' just having received my first Amiga 1000. There were no pre-defined expectations of what a game or interactive story had to be.

In PORTAL, there was no 'choice' in branching narrative tracks, I just had to unfold and collect the story in a seemingly (I didn't know then: simulated) non-linear way. And I felt immersed in that story, not too much disturbed by the clumsy interface that somehow matched the 'authenticity' of the simulated situation. The 'inner' fictional interface of retrieval was identical with the 'outer' interface of controlling the game and story exploration, thus no mimetic context was broken.

Swigart already sensed how he differed from the other interactive storytellers, calling this not primarily a game, but a "Computer Novel" and the aforementioned term "Dataspace Retrieval."[10] It was a concept to "retrieve" a story that wanted to be explored in fragments to be (re-)combined in your head, not to be actively steered and branched apart. But it was rejected by many already experienced game users that complained 'this is not a game' according to their expectations of what a game should be (but they acknowledged it was a well written story).

Still it was an innovative combination of interactivity and storytelling that worked so well for me that I still remember most of the story 30 years later.

Since then I have been waiting in vain for more of same. And slowly I have come to the realization that mainstream narrative game culture has developed in a different direction.

THEN THERE WAS CHOICE

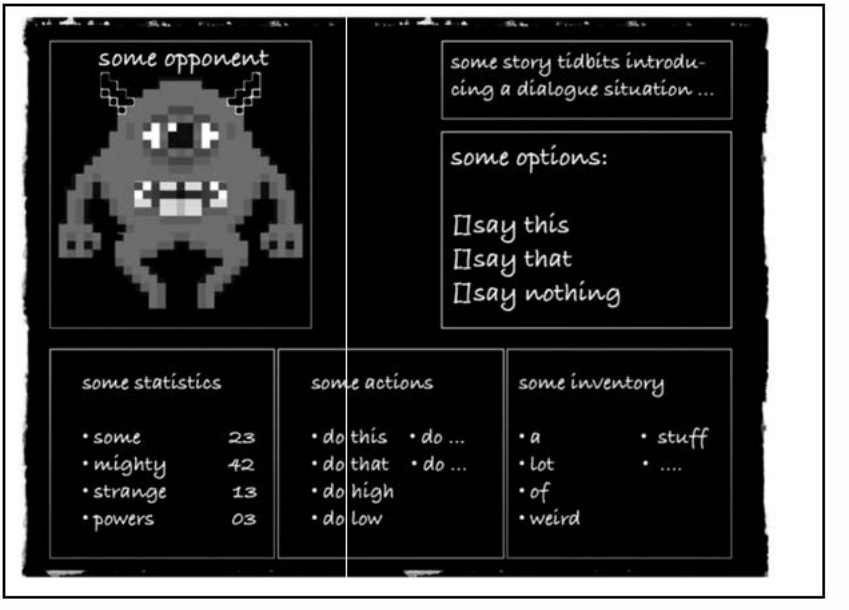
When I first discovered interactive media (and the challenge of designing with/for it) it fascinated me as a new tool for extending the role of the author through interactivity. Yet there was a growing sentiment in the 90s, that interactive media was a way to get rid of the author, as now anyone could be his/her own author. Which is of course an interesting possibility, but (why) did it have to become (nearly) a prerequisite?

10 Swigart, Robert: *Portal—A Dataspace Retrieval*, New York: St. Martin's Press 1988.

When I was collecting and trying every interesting game concept I could get a hold of, I encountered adventure-ish games that fascinated me more than others because they felt more like stories. Again, I was noticing some outspoken gamers complaining in magazine comment sections that 'it wasn't really a game because the riddles and puzzles were too easy.' That they paid hard-earned money for weeks of entertainment, not days. 'To each his own' I was thinking: 'Surely, they will get what they want and I will get what I like in this new developing medium'.

But their side *won*, and for years the paradigm of playing an active character in a multi-path story, choosing between options of conditional narrative branches, solving riddles or puzzles or missions to progress in the story setting became the de facto standard that wasn't really questioned, although it didn't quite work (for me?).

Figure 2: A (rough) template of choice, 1988 style



Source: Own Scribble

Whenever I talked to people professionally reflecting on or developing games about this problem I found agreement (with the caveat that this issue would be resolved soon … or some day).

Often when I discussed the shortcomings of storytelling in games with dedicated gamers, they seemed to get rather confrontational.

But not much seems to have changed from the early days when you had a standardized option screen in adventure or role playing games which typically featured a picture of the opponent on the left, some status information on the bottom of the screen, and on the right the (3+) narrative options you had to choose from in order for the game to continue. Today we simply have better graphics.

You could still use the same overlay template of typical late 80s adventures on an appraised modern 2016 game like NO MAN'S SKY[11] during narrative interactions and it fits. Of course, there are more sophisticated representations of these "aesthetics of choice" in storytelling, like in the prize-winning LIFE IS STRANGE; still it is basically nearly always about giving users options (or letting them search for them) for direct or sub-structural choices, urging them to make a decision and face the consequences.

As many gamers seem unsatisfied with sub-structural choices[12] that don't give enough explicit clues or misrepresent how the story will progress, I think it is appropriate to ask a central question about the collision of authorial intent and the player's freedom of choice: In an interactive drama, would you willfully choose the (hurtful but cleansing) tragic catharsis option or the offering of a happier ending (joyful but with less emotional impact)?

There are highly original independent games like THE STANLEY PARABLE that play recursively with the decision structures of the medium itself and make a cynical statement about the whole problem: "THE STANLEY PARABLE is an exploration of story, games, and choice. Except the story doesn't matter, it might not even be a game, and if you ever actually do have a choice, well, let me know how you did it."[13]

ENCHAINMENT VS AGENCY

In the past years, my students and I have researched and experimented with the pattern, rules, and ingredients of story construction from Vladimir Propp's *31 Narratemes ("Morphology of the Folk Tale," 1928, english 1958)*, George Pol-

11 No Man's SKY (Hello Games 2016, ●: Hello Games)

12 Baumgartner, Robert: "'Alles, was Sie von nun an tun, kann und wird gegen Sie verwendet werden'," in: Redaktion PAIDA (ed.), *"I'll Remember This,"* Glückstadt: vwh 2016.

13 The STANLEY PARABLE (Galactic Cafe 2011, ●: Davey Wreden/William Pugh)

ti's *36 Dramatic Situations ("The Thirty-Six Dramatic Situations,"* 1895, english 1916) and Joseph Campbell's *Hero's Journey* ("The Hero with a Thousand Faces," 1949) to Robert McKee's *Story* ("Story: Substance, Structure, Style and the Principles of Screenwriting," 1997) and so on. In several cardboard prototyping projects and concepts, we tried to apply and formalize these rules in game mechanics to find potential points of augmentation to the creativity of human storytelling, as we did not (yet) believe in using them for algorithmic, procedural narratives (at least, enjoyable ones). We came a long way from the 90s euphoria of interactive storytelling to re-discover that telling a (good) linear story may be the biggest artistic achievement and challenge we could find, and without mastering it (and really understanding it), it's hardly possible to achieve a good interactive story.

Theory says when engaging with a narrative structure we get into some sort of fiction contract. The fiction contract, well known and studied, is the experience of the linear cinematic film in its controlled environment. Dirk Blothner even coined the term "enchainment contract,"[14] a contract we voluntary enter into when sitting down in the movie theater and which especially works there *through the exclusion of interactivity* --to make recipients submit fully (and willingly) to authorial intent.

Even linear narratives are sometimes 'narrative games' in and of themselves: they disorient and play with the recipient, especially in cinema where the recipient's mind is intensely 'played' by the author(s).

So where to go from here, deducing that the immersive emotional quality of cinematic experience and linear storytelling in itself can be the *antithesis* to the obligation of choice and decision in interactive approaches?

Meanwhile, digital games offer us something called *agency* in a perceived quality and—still often simulated—degree that sets new standards in interactivity. Janet Murray gave the definition of *agency* as "the satisfying power to take meaningful action and see the results of our decisions and choices."[15] Visible elements of affordance are important elements of agency structures. By definition, and introduced in the design of digital media by Donald Norman,[16] *affordance* means "the qualities or properties of an object that define its possible

14 "Fesselungsvertrag" in German. See Blothner, Dirk: *Erlebniswelt Kino*, Cologne: Lübbe 1999.

15 Murray, Janet: *Hamlet on the Holodeck*, Cambridge/ Mass.: The MIT Press 1997, p. 324

16 Norman, Donald: *The Design of Everyday Things*, NY: Basic Books 1988.

uses or make clear how it can or should be used."[17] Together they form the basic core of narrative game interactivity.

Brenda Laurel specified this even further with her demands for VR environments: "By engaging in an immersive virtual world with various affordances and themes, a participant creates a story, or many stories, by traversals of the world. The author(s) of the world must design cues and affordances that encourage the participant to make dramatically interesting choices. [...] If agency is to be robust, a designer cannot maintain a strict storyline."[18] To me this intensifies the problem.

Presently we seem to approach interactive storytelling and its agency structures according to the *law of the instrument*. You know, 'if you are given a hammer, you want so see (and pound) nails everywhere.' So how about calling it 'if you are given the promise of agency, you expect affordances everywhere'? And every little affordance to see and expect, you pound it and pound it in a literally ludic sense and feel disappointed if it isn't poundable (regardless if poundability makes sense).

To me it feels like a cycle of game makers producing agency for the sake of agency, and in turn gamers are getting spoiled by this promise and increasingly want more of it. This in turn motivates the game makers to fulfill their promise by providing even more realistic agency.

And we all are somehow shaped by this. We condition ourselves to the general promise of agency. We feel 'entitled' to agency. We expect and search for affordances everywhere. And we are disappointed if they missing.

Somehow, we have been now in a decades-long, constant state of mind that having interactivity means storytelling must be story-playing. That the reader—now player—has to be given the power of the author via an established *aesthetic of choice*, which is based on an assumption that this is the only way storytelling can be made interactive. This has made the stories told in this way (not their plots) rather bland or mechanical while the medium still waits for a narrative game title that truly solves the story-playing promise, despite notable attempts like HEAVY RAIN,[19] BEYOND: TWO SOULS[20] and LIFE IS STRANGE.[21] As Jaron

17 Merriam-Webster: https://www.merriam-webster.com/dictionary/affordance

18 Laurel, Brenda, "What is Virtual Reality?" *Medium*, July 16, 2016, https://medium.com/@blaurel/what-is-virtual-reality-77b876d829ba

19 HEAVY RAIN (Sony 2010, ●: Quantic Dream)

20 BEYOND: TWO SOULS (Sony 2013, ●: Quantic Dream)

21 LIFE IS STRANGE (Square Enix 2016, ●: Dontnod Entertainment)

Lanier pointed out, "... the Turing test cuts both ways. You can't tell if a machine has gotten smarter or if you've just lowered your own standards of intelligence to such a degree that the machine seems smart."[22]

Lowering our standards towards storytelling through a medium that constantly and instantly rewards choices and demands rapid decisions might influence game players—spoiled by immersion through agency itself—to accept those flawed narrative structures and even not recognize their flaws anymore.

To some, highly realistic agency in a multi-player fictional world already became the equivalent of story; for me there is still something missing.

A VISION: STORY RETRIEVAL SPACES

When I recently discovered the genre of the (digital) "escape room" in mobile and VR environments, I noticed something interesting about many mobile "escape room" games in particular:

They are basically the old MYST[23]-like adventure game stripped of the story; only the puzzles and riddles remain. Which has a kind of pureness, emphasizing the *aesthetics of choice*.

So, I may have an old-fashioned concept of authorial intent when it comes to the purpose of storytelling, yet I can accept and enjoy the ludic interactivity of digital games and their *aesthetics of choice* as its own defining, constituting quality apart from any narratological constraints. Still there is room to reconnect the power of agency and narratives in ways that nearly seem forgotten or barely attempted.

In 2015, I became aware of a game that seemed familiar in the way it polarized some of the game community: EVERYBODY'S GONE TO THE RAPTURE[24] (and its predecessor DEAR ESTHER[25]). No riddles to solve, no high score to beat, no mission to accomplish, no drastic decisions to be made. Just exploring the mysterious story of what happened to the world and this little British village where seemingly everybody vanished to some sort of, yes, rapture.

It feels slow, even meditative with a high focus on ambience and it again broke the expectations of many gamers: they missed agency, they missed af-

22 Lanier, Jaron: You Are Not a Gadget: A Manifesto, New York: Knopf 2010, p. 32.

23 MYST (Broderbund 1993, ●: Cyan Worlds)

24 EVERYBODY'S GONE TO THE RAPTURE (Sony 2015, ●: The Chinese Room)

25 DEAR ESTHER (The Chinese Room 2012, ●: The Chinese Room)

fordance, they missed the open world promise of the games they had grown used to. 'It's not a game!' Maybe it shouldn't be perceived as one? So, some can argue over whether it tells a great story, or if it is a boring or an inspiring game, or a game at all—but no one can doubt the potential of its immersive approach to transporting a story. It resonates with David O'Reilly's claim that games should be "less about the goal and more about the texture"[26] (shown especially in the even more meditative DEAR ESTHER).

Being nearly 'conditioned' by the abundance of agency promises and the interactivity routines of the first-person/stealth-shooting worlds, we neglected sensitivity for applying these agency structures to subtler, story supporting uses—so why not (re-)discover this potential?

From the 1986 PORTAL to 2015's EVERYBODY'S GONE TO THE RAPTURE and some lesser known experiments in between, a line can be drawn to form a rarely used but highly interesting format I would like to call 'Story Retrieval Spaces.' This format uses interactivity to immerse users in story-related exploration of envisioned authorial intent (which includes multiple authors) in different and perhaps more intense ways than linear media could ever provide (and they provide this well). Maybe we should have taken the first step before the second?

It is not my intention to declare the established ways of interactive narratives as unilaterally wrong, but to point out there was/were an alternative we could learn to (re-)embrace.

And in case we don't—we all could have been wrong anyways and the future may lie in new ways of enabling and augmenting emergent skills in the human urge to tell stories. So, it might make sense exploring the true emergent qualities of real open world environments where you could (but don't have to) alter their rules, best demonstrated by what the kids do with MINECRAFT.[27] The inspiration was derived from observing my own kids and their friends (between 10-15 years) interacting with that popular game that seems to be shaping a whole generation.

In combination with Youtube culture it shows an amazing synergy of gameplay and its documentation leading to new narrative formats and a climate of

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26 Presentation David OReilly, *Clash of Realities*, 2016, Nov. 7, Summit day.

27 Gasteier, Klaus: "Minecraft Literacy—Wie ein Spiel eine Generation prägt und ein selbst-regulierendes Ökosystem kollaborativer Innovationsprozesse möglich machte," in: Christian Blümelhuber/ Thomas Düllo/ Franz Liebl (eds.), *Jahrbuch der GWK—GWK001*, Berlin: UDK-Verlag 2017; MINECRAFT (Mojang/Microsoft Studios 2009, O: Mojang)

continuous experimentation, in a closed cultural environment hardly anyone over 20 is really aware of.

We may not like or really understand (yet) what they are playing and narrating there, but we should watch closely how they are doing it—and what they probably might do to the domain of storytelling in several years of getting used to express themselves in a new realm of procedural/computer literacy[28] that incorporates a purer form of agency than what we at the moment take for granted.

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Games as a Source of Future Memory

A Typology

DANIELA KUKA

An overwhelming number of scientific and programmatic texts suggest that play is a source of intellectual, social, and economic evolution.[1] Eric Zimmerman correctly suggested games "as models for learning and action in the real world," claiming that game design concepts exactly represent the "new set of cognitive, creative, and social skills" that support problem-solving in various future fields, but that are not yet part of traditional education.[2] Accordingly, games seem to perfectly embrace the challenges that come along with an uncertain, contingent, and surprising future.[3] They could be *the* methodology or tool all kinds of

1 Huizinga, Johan: *Homo Ludens: A Study of the Play-Element in Culture*, 1955; Sutton-Smith, Brian: *The Ambiguity of Play*, Harvard University Press 2009. An overview: Charalampos Mainemelis/Ronson, Sarah: "Ideas Are Born in Fields of Play: Towards a Theory of Play and Creativity in Organizational Settings," in: *Research in Organizational Behavior* 27 (2006), pp. 81-131.

2 Zimmerman, Eric. "Gaming Literacy: Game Design as a Model for Literacy in the Twenty-First Century," in: Bernard Perron/Mark J. P. Wolf, *The Video Game Theory Reader2*, New York, London: Routledge 2009, p. 24f.

3 Bauman, Zygmunt: *Liquid Times: Living in an Age of Uncertainty*, 1st ed, Cambridge: John Wiley & Sons 2007; Luhmann, Niklas: *Beobachtungen der Moderne*. 1. Aufl. Opladen: VS Verlag für Sozialwissenschaften 1992; Taleb, Nassim Nicholas: *The Black Swan: The Impact of the Highly Improbable*, Trade Paperback. London: Penguin 2008.

organizations look for to manage the unpredictable[4] and approach *wicked problems*.[5]

At the same time, lots of organizations have difficulties to leave their 'comfort zones'. They keep up fallacious, obsolete, or even dysfunctional structures and routines—just to avoid uncertainty.[6] And when they need some knowledge about the future, they hire 'hip' agencies that produce trendy buzzwords, remarkable future narratives and high-gloss prophetic imageries. However, this information often does not change anything in organizational realities. We suggest a different approach and claim that organizations should start to play games that increase their "future memory". We will offer new challenges for game designers and an appropriate theoretical approach for those of you who are interested in the scientific foundation of so called "Future Games".

Before we start, a little warning to the disciplined reader. The following ideas are not possible without crossing frontiers. The reader will be confronted with at least three clashes of realities: Firstly, a clash of disciplines—in particular: *game studies*, *memory studies*, *system theory*, and *design research*. Secondly, a clash of knowledge cultures—in particular: the *cultures of scientific research* and the *cultures of play*. Thirdly, a clash of pragmatic mindsets—in particular: the mindset of a *game designer* whose focus is to create outstanding ludic artifacts and remarkable player experiences, the mindset of a *researcher* who tries to generate reliable knowledge, and the mindset of a *strategist* or *decision maker* who follows her own interests, especially to capture practical solutions to real-world problems. *Be prepared!*

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4 Bell, Wendell/Olick, Jeffrey K.: "An Epistemology for the Futures Field: Problems and Possibilities of Prediction," in: *Futures* 21/2 (1989), pp. 115-135. http://www.sciencedirect.com/science/article/pii/0016328789900013

5 Rittel, Horst W. J/Webber, Melvin M.: "Dilemmas in a General Theory of Planning," in: *Policy Sciences* 4/2 (1973), pp. 155-69.

6 Epstein, Larry G.: "A Definition of Uncertainty Aversion," in: *The Review of Economic Studies* 66/3 (1999), pp. 579-608.

FUTURE MEMORY

Games 'transport' their players to either the past, to an alternate reality, or even to a speculative future.[7] They seem to be perfect vehicles for "mental time travel"[8]—one of the most powerful tools in human evolution.[9] By traveling forth in time, the human brain constructs snippets of memory that are then used to discuss the future, to prepare for an upcoming event or situation, to draw out plans and strategies, to create consistent self-narrations, to achieve long-term goals, to protect ourselves from negative experiences, and to reflect on our decisions.[10]

Unfortunately, memory is still an underestimated concept in both future and game studies. One reason for this may be that the concepts of memory often explain how people envision their past, not their futures. However, neurophysiological experiments provide evidence that people use the same memory sources to envision their past *and* their future,[11] and accept creative authorship.[12] Thus, future memories not only support people in creating precise plans. By projecting

7 Examples are Collaborative Forecasting Games (The Institute for the Future), Climate Games, Sarkar Gaming, Alternate Reality Games (e.g, World Without Oil), Virtual U-/Dystopian or Altered Pasts Adventures (e.g, State of Mind, Fallout series, Bioshock), and even Board Games (such as GEOlino's cute Meltdown).

8 Suddendorf, Thomas/Corballis, Michael C.: "Mental Time Travel and the Evolution of the Human Mind," in: *Genetic, Social, and General Psychology Monographs* 123/2 (1997), pp. 133-67; Szpunar, Piotr M./Szpunar, Karl K.: "Collective Future Thought: Concept, Function, and Implications for Collective Memory Studies," in: *Memory Studies* 9/4 (2016), pp. 376-89.

9 Suddendorf, Thomas/Corballis, Michael C.: "The Evolution of Foresight: What Is Mental Time Travel, and Is It Unique to Humans?," in: *Behavioral and Brain Sciences* 30/3 (2007), p. 7.

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11 Ingvar, David H: "'Memory of the Future': An Essay on the Temporal Organization of Conscious Awareness," in: *Human Neurobiology* 4/3 (1985), p. 128.

12 Bartlett, Frederic C.: *Remembering: A Study in Experimental and Social Psychology*, Cambridge University Press 1995.

themselves into new and unfamiliar situations, they reduce the cognitive effort and stress caused by uncertainty.[13]

Most of the future researchers who include games (e.g., *Gaming Simulations, War Gaming*) in their toolkit[14] assume that uncertainty about the future could be reduced by algorithms or expert consultancy. We would like to make future designers understand mental time travel as a creative and experimental, not as a rational practice,[15] and suggest to follow Serres who argues that we need more approaches that replace logical reasoning by creative experiments.[16] By such creative experiments we could rid ourselves of the mirrors of our current mindsets and expectations[17] that render us blind to the things that are "too new to know."[18]

This leads us to a difficult question that is at the core of this article: *How is it possible to make a game of something that we cannot know, yet?* How is it possible to make a model of a not yet known system? These questions challenge principles of commercial game design. Could we imagine a game that resists defining solvable challenges, and would instead favor tentativeness, ambiguity, and blank spaces? Could we imagine a game that envisions possible futures without impressive, photorealistic and high-definition imagery, well-defined landscapes and stories, and balanced input-output-systems that spill over with pre-defined rewards designed to stimulate the player? Against these fundamental traditions and practices of game design, a game that stimulates the player's future memory would have to embrace not only the player's uncertainty[19]—but also the designer's.

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13 Bar, Moshe: "The Proactive Brain: Using Analogies and Associations to Generate Predictions," in: *Trends in Cognitive Sciences* 11/7 (2007), pp. 280-289.

14 Glenn, Jerome C./Gordon, Theodore J.: *Futures Research Methodology* (version 3.0), 2017, http://www.millennium-project.org/millennimn/FRM-V3.html..

15 Examples are Forward Cinema, Preenacting Europe, Speculative Games, or Lego® SeriousPlay®.

16 Serres, Michel: *Erfindet euch neu!: Eine Liebeserklärung an die vernetzte Generation,* Deutsche Erstausgabe. Berlin: Suhrkamp Verlag 2013, p. 43.

17 N. Lulunann: Beobachtungen der Moderne, p. 130.

18 Steinle, Friedrich: "Entering New Fields: Exploratory Uses of Experimentation," in: *Philosophy of Science* 64 (1997), p. 70.

19 Costikyan, Greg: *Uncertainty in Games,* Reprint. Cambridge: Playful Thinking Series 2015.

THE RESPONSIBILITY OF FICTION AUTHORS

Since *all* representations of possible futures—no matter whether they are a forecast, a vision, or a novel—are nothing other than fiction,[20] the only resource we have to make sense about the future are ... fictions. They are not just symbolic representations; as the future is going to be delayed again and again—"the future cannot begin"[21]—, it will be fictions that shape which futures may emerge.

Imagine two different governments. One of them assumes 'global warming' as being a significant fiction about the future. Decision makers then start to regulate emissions, draw up laws, offer subsidies for using alternate energies, create chances—and also norms—to allocate research funds and market opportunities, e. g., for the automotive industry, nanotechnology, or architecture and urban planning. As a consequence, individuals and organizations adapt to such conditions and redistribute their attention and resources. Decision makers from the other government consider 'global warming' as being just an expensive illusion, popularized by the Western World's liberal elite. Consequently, they shape a completely different reality. They reject sustainable policies and spend their limited resources on other goals.

As we can see, remembered fictions about the future guide present strategies and choices, and become inscribed in laws, economic practices, and social norms. Even if they are 'just' fictions, they create the facts of the present: "If men define situations as real, they are real in their consequences."[22] Consequently, different memories about the future create different present realities.It seems that researchers and designers, astronomer and fortune tellers that provide fictions about the future have a high responsibility as they produce the raw material of future memories. As soon as people are involved in future conversations, visioning, planning, decision-making, and creative problem-solving, they will not only rely on information from prior experiences, but add snippets from fictional

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20 Esposito, Elena: *Die Fiktion Der Wahrscheinlichen Realität*, translated by Nicole Reinhardt, Frankfurt am Main: Sulrkamp 2007, p. 57.

21 "The Future Cannot Begin: Temporal Structures in Modern Society," in: *Social Research* 43/1 (1976), pp. 130-52.

22 W Thomas, William I./Thomas, Dorothy S. T: "The Child in America: Behavior Problems and Programs," in: *The Methodology of Behavior Study*, New York: Alfred A. Knopf 1928, pp. 553-76.

media.[23] Such mental time travel activities leave new traces in our brains: new snippets of information "might be 'written' in memory for future use."[24]

As a consequence, novelists, filmmakers, and, of course, game designers will have to work against normative discourses and mental barriers to produce *parts of the fictitious raw-materials* that both novices and experts will later re-use for their own mental time travel activities. *Dear game designers, please be aware that the fictions you'll create will be an important resource of your consumer's memory. Especially if you'll design participatory narrations that players experience from a first-person perspective, your game will create strong episodic memory traces.*

THE FORM OF A FUTURE GAME

What makes a game a Future Game, and how does it affect human future memory?

In order to develop a definition, we suggest two epistemological premises that together form an evolutionary model of reality.

- *Fictional contracts*[25] *of the first order (FC_1):* Assumptions and expectations social actors rely on in their present reality in order to make sense of their environments, to coordinate interactions with others, and to deal with new information.
- *Fictional contracts of the second order (FC_2):* Novels, movies, games, fine art … and other poetic forms that observe, comment and manipulate FC_1. They are the only instruments that are authorized to question, parody, and even subvert what usually is considered as being unquestionable.

Following this model, defining and—later—distinguishing Future Games is just a question of how these two fictional contracts are related to each other. Based on an idea from cybernetics and system theory, we argue that 1) a game (FC_2) is a specific mode of observation, and that 2) a Future Game is a specific mode of observing how both, the information stored in FC_1 and in FC_2 are going to be

23 T. Suddendorf/M. C. Corballis: "The Evolution of Foresight," p. 7.

24 M. Bar: "The Proactive Brain," p. 286.

25 Eco, Umberto: *Im Wald der Fiktionen: Sechs Streifzüge durch die Literatur*, translated by Burkhart Kroeber, Munich: Carl Hanser 1994, p. 103.

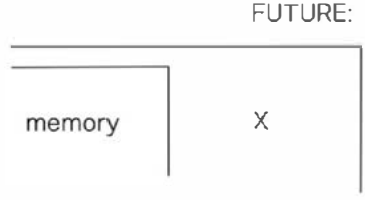
used to deal with uncertain futures and create innovative approaches to solve not yet solved problems. With this point of entry, we can avoid a definition that applies the problematic distinction between game|reality.[26]

Rötzer suggested an interesting approach that distinguishes between "first" and "second order games":[27] "First order games" are played unconsciously as a part of the everyday social reality of people (FC_1). "Second order games" are designed and played consciously (FC_2) in order to enhance the possibilities offered by FC_1. They refer to "first order games" in a way that they render visible the hidden and unquestioned assumptions and expectations of unconscious games (FC_1).

Future Games go one step further: as they cannot refer to an already existing system or phenomena, they only can refer to other fictions. Thus, Future Games seem to create *fictional contracts of the third order*, making observable whether or not a society (or a smaller group) is flexible enough in order to create future imaginations and problem-solving approaches that go beyond the limitations of their FC_1.

In that context, 'future' will not be understood as a concept of time, but as a part of memory that is notyet available. This idea is visualized by the following form that applies George Spencer-Browns "Laws"[28] (see Figure 1):

Figure 1: Future



Thus, the epistemic purpose of a Future Game is to create experiences that provide snippets of memory that "make a difference that make a difference" [29] about the way we face possible futures at present. It creates fictional experiences that challenge and enhance the fictional resources people use to make sense of their dynamic environments. Thus, the challenge for a Future Game designer is to design fictions that reveal not yet available memory snippets and make them available as 'new

26 For a meta-analysis, see Roth, Steffen: "Serious Gamification: On the Redesign of a Popular Paradox," in: *Games and Culture* 12/1 (2015), pp. 100-111.

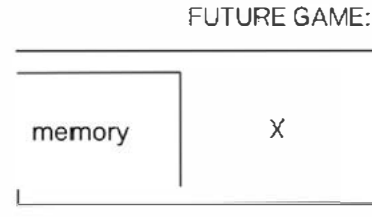
27 Rötzer, Florian: *Ist das Leben ein Spiel?—Aspekte einer Philosophie des Spiels und eines Denkens ohne Fundamente*. Köln: König, Walther 2013, pp. 20-22.

28 Spencer-Brown, George: *Laws of Form*, London: Allen & Unwin 1969.

29 Bateson, Gregory: *Geist und Natur: Eine notwendige Einheit*, translated by Hans Günter Holl, Frankfurt am Main: Suhrkamp Verlag 1987, p. 123.

information' for prospective thinking, future conversations, planning, decision-making, and creative problem-solving. They do not have to propose a story, an event, or a situation that is expected to be 'real' someday. They 'only' have to create situations that are new to everyone. Neither the game designer, nor the players should be able to start the game by means of already available memory resources. Embraced with a situation that is "too new to know," they need to act experimentally in order to come up with new information (see Figure 2).

Figure 2: Future Game



However, this definition still does not say anything about how these new experiences make any valuable difference to make choices, develop strategies and solve problems under the conditions of uncertainty. To provide you with an answer, we have to examine the way how people make sense of their present environments and their possible futures in more detail. What has been introduced as fictional contracts of the first order (FC_1) could also be understood as a repertoire of "operative fictions," as Schmidt labels them.30 They form a shared body of collective knowledge that is reliable for all members of a society. Social actors refer to them in order to reduce contingency and increase the probability of meaningful interactions.

Schmidt gives two reasons that this knowledge is fictional: firstly, it does not have to be 'true' (in the sense of being scientifically proven)—it just has to be credible in social interactions ('operative'). Secondly, this knowledge is not questioned every time when it is applied. Social actors are guided by implicitly expecting and assuming what other actors are expected to implicitly expect and assume.

In a complex, democratic society, different interpretations of FC_1 can coexist and overlap, e.g., the FC_1 of being a typical family (FC_{1a}), of dispensing justice (FC_{1b}), of generating true knowledge (FC_{1c}), of being a brand (FC_{1d}), a nation (FC_{1e}), or a sustainable company (FC_{1f}). However, in one epoch and culture, most FC_1 rely on a limited set of categories and their semantic distinctions, such as man|woman, young|old, human|machine, friend|enemy, owning|sharing, success|failure, healthy|ill, and private|public. Built on the same categories and dis-

30 Schmidt, Siegfried J.: *Geschichten & Diskurse: Abschied vom Konstruktivismus*, Rowohlt Taschenbuch Verlag 2003, p. 33.

tinctions, discourses and narrations are coherent with the receivers understanding of reality, even if they were produced in different contexts. Human actors intuitively apply them, because they reduce cognitive efforts. They work like an algorithm: on the one hand, they give reason and offer orientation, but, on the other hand, they tend to produce redundancy. Human actors protect them by a "willing suspension of disbelief"31—in order to avoid jeopardizing the systems they live and work in: an economic organization cannot cease to believe in fictions that reproduce the distinction of private property and common goods, win and loss, or efficiency and inefficiency. A medical institution cannot cease to believe in fictions that reproduce the distinction between healthiness and illness. And a scientific team needs to reproduce fictions that are built on the distinction between true and false.

But what if the future faces us with situations and challenges that cannot be understood and solved by applying existing operative fictions? As societies are complex and heterogeneous, operative fiction cannot be renewed and transformed at will of single actors. To overcome barriers of change and innovation that emerge from its own operative fictions, societies establish tools that provide them with *fictional contracts of the second order (FC_2)*. Those tools can be, as mentioned, literature, movies, theatre, fine arts, or games.[32] As poetic forms, they re-introduce contingency,[33] and they are of utmost importance for a society's evolution. Without them, it would be much harder to develop, articulate and distribute ideas that are incompatible with our current FC_1.

FC_2 introduce episodes of interruption that provide a social consensus for a group to rid oneself of their FC_1 temporarily: as the cabaret artist Rainald Grebe invites people from the audience—seated in a non-smoking event space to attend his concert—to join him on stage and smoke a cigarette, he is gaming the fictional contract of a non-smoking society (FC_1) by means of the fictional contract of art (FC_2). This way, he renders visible a legal loophole: On stage, the artist explains, people do not smoke! They are just *pretending to* be smoking. However, those tactics of hacking FC_1 need an authorized frame, here: the stage.

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31 Coleridge, Samuel T.: *Biographia Literaria*, London: J. M. Dent 1817.

32 Baecker, Dirk: "Unbestinunte Kultur," in: Albert Koschorke/Cornelia Vismann, *Widerstände der Systemtheorie: Kulturtheoretische Analyse der Werke von Luhmann*, Walter de Gruyter GmbH & Co KG 1999, pp. 29-48.

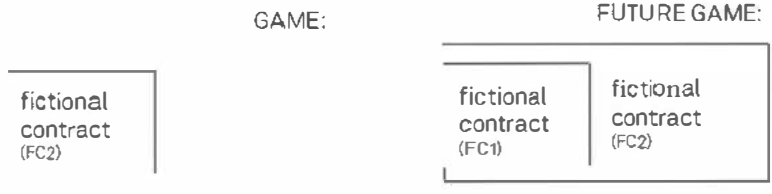
33 Ibid., "The Form Game," in: *Problems of Form*, Stanford, CA: Stanford University Press 1999, pp. 99-106

Applied to organizations, it's even more clear that a game (FC_2) has to mark its beginnings and endings clearly. According to most organizational FC_1, playful experimentation is just possible under the condition that everyone will switch back to her routine afterwards.[34] Organizations suffer from a paradox: their fictional contract (FC_1) exactly excludes what an efficient game tool expects: inefficiency. Thus, Future Games in organizations will only be possible if the organization's FC_1 is flexible enough to implement processes that actually are incompatible with their fictional contract. Only this way, an "organization can distance itself from itself in such a way as to allow it to observe itself and from that position initiate change of its structures."[35]

Finally, and to sum up the core ideas of the section, we highlight three aspects:

- In order to reduce contingency in their present environments, social actors agree on fictional contracts (FC_1). They embrace assumptions and expectations about both, the present and the future.
- FC_1 can become obsolete and produce blind spots. In order to come up with an update of their operative fictions, they need tools that help them to enhance their sources of memory, e.g., they could play a game.
- Not all types of a game will provide relevant snippets for future memory. A Future Game designer would take memories from the players fictional contracts of the first order (FC_1) and relate them to fictional ideas that make a difference (FC_2) (see Figure 3).

Figure 3: Game and Future Game



34 Luhmann, Niklas/Schorr, Karl-Eberhard (eds.): *Zwischen Anfang und Ende: Fragen an die Pädagogik*, Frankfurt am Main: Suhrkamp 1990.

35 Hendry, John/Seidl, David: "The Structure and Significance of Strategic Episodes: Social Systems Theory and the Routine Practices of Strategic Change," in: *Journal of Management Studies* 40/1 (2003), p. 184.

Payers shall *not* forget their FC_1; instead, they are challenged to deal with the conditions of both, the conditions of the FC_1 and of the FC_2—no matter whether they are similar or contradictory. To put this idea into practice, a Future Game designer can apply at least four epistemic strategies that are going to be figured out in the next section.

A TYPOLOGY OF FUTURE GAMES

Applying the insights from the prior sections, we can now outline a typology of Future Games. The typology (see Figure 5) elicits four types of future games, each related to a specific type of future memory (see Figure 4). Deduced from scientific literature in neurophysiology,[36] the following types of future memory can be distinguished:

- *Future Facts:* Abstract *facts* about the future that are deduced by an application of existing concepts to uncertain futures, e. g., *'knowing'* an event will occur, such as snow in the winter, or increasing sea levels.
- *Future Scripts:* Successful concepts of *practical experiences* are identified and transferred to prepare oneself for uncertain futures, such as an upcoming job interview, an environmental disaster, or a military mission. Imagining such events in advance, we create memories that can be applied in case a similar event happens.[37]
- *Future Particles:* Based on "smallest snippets of events" that serve as "raw material," we use our memory as a "general toolbox" to create a potentially unlimited "number of potential future scenarios one might envisage."[38] We mentally *create vivid new scenes*, e. g., imagining how our first trip to New Zealand will have been, or how we will have solved a tricky engineering

36 Tulving, Endel: "Episodic and Semantic Memory," in: Wayne Donaldson /Endel Tulving (eds.), *Organization of Memory*, New York: Academic Press 1972, pp. 381-402; Atance, Cristina M./O'Neill, Daniela K.: "Episodic Future Thinking," in: *Trends in Cognitive Sciences* 5/12 (2001), pp. 533-39; Moulton, Samuel T./Kosslyn, Stephen M.:"Imagining Predictions: Mental Imagery as Mental Emulation," in: *Philosophical Transactions of the Royal Society B: Biological Sciences* 364/1521 (2009), pp. 1273-80.

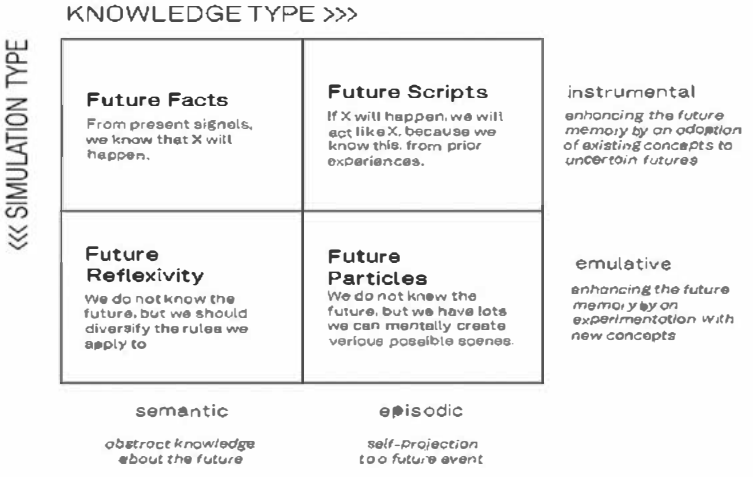
37 M. Bar: *The Proactive Brain*, p. 286.

38 T. Suddendorf/M. C. Corballis: "The Evolution of Foresight," p. 7.

problem as soon as we are back in our office, or how we probably will have missed the opportunity to catch some fresh air and the beauty of a sunset because we were totally under the new gadgets' spell.

- *Future Reflexivity: Rules* of the concepts that are applied to create future knowledge are *reflected*, e. g., recognizing that we are always creating false expectations of how long a planned meeting will take, or that our mental images of a future city are packed with iconic quotes from Hollywood cinema.

Figure 4: Future Memory Matrix



The underlying dimensions of the typology distinguish *two modes of knowledge* (semantic and episodic)[39] and *two modes of mental simulation* (instrumental and emulative simulation).[40] The *semantic type* describes mental simulations that originate in abstract regularities between the past, the present and the future. These regularities have been derived from a series of events. The *episodic type* describes mental simulations that originate in personal experiences from a first-person view, involving people, artifacts, actions, and emotions. The *instrumental type* describes a process of constructing future memories by applying knowledge from the past to the future, without questioning it. The *emulative type* describes a

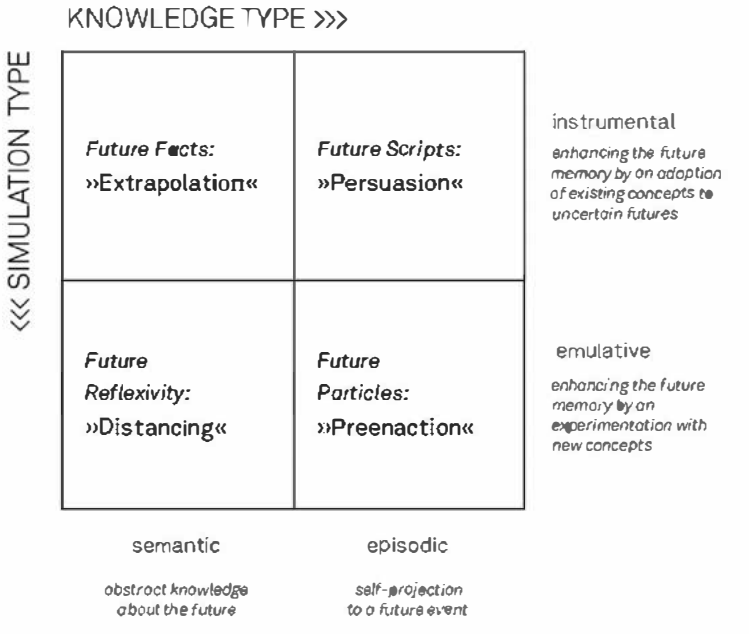
39 E. Tulving: "Episodic and Semantic Memory."

40 S. Moulton/T. Kosslyn: "Imagining Predictions."

process of creative de- and reconstruction in order to generate and envision new ideas and concepts.

While all types can be stimulated and enhanced by a game design concept, they significantly differ in how they affect the player's future memory. However, the game types should not be considered as mutually exclusive or exhaustive, they just outline idealized concepts.

Figure 5: Four Types of Future Games (based on Figure 4)



The horizontal dimension indicates whether a Future Game generates resources for the *semantic* or *episodic memory*. The vertical dimension indicates whether the game applies existing concepts to a future situation (instrumental) or creates new ones (emulative). The combination of both dimensions results in four types of Future Games which we will now briefly discuss.

Extrapolation: A game designer derives FC_2 as a logical result from (FC_2 :x: FC_1). She supports the production of *future facts*. Uncertain futures are assumed to confirm the fictional contracts of the present (FC_1). The fictional contract of the game (FC_2) is built on the same concepts as FC_1, like principles of choice, patterns of conflicts, rules of strategic interaction, but also friendship, work, home, etc. Shortcomings: Future Games that follow an extrapolative epistemic

strategy have to ignore everything that does not fit the concepts that make sense of our present reality (FC_1). Although they fulfill the requirements of producing 'facts' from a scientific point of view, they cannot solve the problem that there will future phenomena that cannot be explained by the concepts we trust in the present. Principles/examples: mathematical simulation.

Distancing: A game designer criticizes the players' current fictional contracts (FC_1), e. g. by a re-introduction of suppressed, but nonetheless plausible fictional contracts ($FC_2 \wedge FC_1$), or by forcing them to adopt the exact opposite ($FC_2 = \neg FC_1$). She initiates a process of *future reflexivity*. Uncertain futures are assumed to suffer from suppressed possibilities or possibilities that have been rendered invisible, e.g., dominant trend discourses, normative codes in futuristic iconography, narratives, myths, etc. Thus, the fictional contract of the game (FC_2) reintroduces concepts that are excluded or stigmatized in FC_1. Players are challenged to critically reflect on popular assumptions about the future. Shortcomings: Designers that follow a distancing epistemic strategy are themselves limited in recognizing their own blind spots. In practice, instruments that critically approach dominant images of the future are often limited to the field of arts—thus, they are recognized only by a minority. People that are challenged to solve real-world problems complain that critical reflections alone do not necessarily produce (better) solutions. Principles/examples: counterfactual reasoning, subversion, exaggeration, parody, critical play.

Persuasion: A game designer motivates players to better fulfill their current fictional contracts (FC_1), like in a serious game or a gamified health app. She supports the re-production of *future scripts*. Thus, already known role-models of problem-solving from FC_1 are translated into the motivational scripts of a game environment or a gamified interface ($FC_2 = FC_1$). FC_2 are normative idealizations of FC_1—intending to protect players from stigmatized behaviors (procrastination, bad eating habits, distractibility, or laziness). They also can be designed to improve skills that are expected to be relevant in the future. The fictional contract of the game (FC_2) evaluates how the player performs in real life (FC_1). The players' challenge is to find out what the game (FC_2) assumes as the perfect path to the future. Thus, Future Games that follow the persuasive path accept an informational asymmetry between the designer/system and the player. Shortcomings: Both the problem and the solution are already pre-defined by the game (FC_2). But who selects, distributes, and evaluates what *future scripts* will be appropriate, and for whom? Principles/examples: gamification, role-playing, coaching & training.

Preenaction: A game designer challenges the players with contradictory conditions of FC_1 and FC_2 ($FC_2 \perp FC_1$). She supports the production of *future*

particles. Uncertain futures are considered as being unpredictable; they emerge when people enact their environment. The fictional contract of the game (FC_2) therefore is incommensurable to the fictional contracts that guide social interaction in present reality (FC_1), e.g., by shifting normalized categories and rules of distinction—such as man|woman, young|old, good|evil, nature|culture, human|machine, life|death, public|private, fun|work, native|immigrant, in|out, child|adult, ill|healthy, busy|lazy, rational|irrational, social|liberal, right|wrong. Both the player and the designer are faced with uncertainty. Games that follow the preenactive path refrain from suggesting a well-defined idea of the future; instead, they create an open, experimental situation in which a possible game emerges from potentially endless iterations of designing and playing. In this approach, the processes of designing and playing can no longer be separated. Shortcomings: Difficult design challenges (see last section). Principles/examples: collaborative forecasting games, real-world experiments, participatory action research.

The four epistemic strategies—Extrapolation, Distancing, Persuasion, and Preenaction—are open to various game design ideas. In the last section, we outline a game design concept that emerges from our own research and is focused on the preenactive strategy.

THE PREENACTION APPROACH

In May 2012, together with my colleague Klaus Gasteier, I observed 15 players playing THE SOCIAL QUANTIFIED SELF (SQS), a parlor game made with simple cardboard materials and index cards (Figure 3). The players were irritated. Expecting a well-defined, well-balanced, and well-designed game, they seemed overwhelmed and disappointed when we prompted them to fill in most of the playing cards themselves. Before they were invited to mentally travel forth in time—let's say: a social network in 2019—, we wanted them to include their personal memories from their daily use of digital social networks.

Suddenly, after two hours of intensive game-play, some of the players interrupted the session. "This is," one of them stated nervously, "not a social network. It is something else. I don't know …" His conclusion was that, in his group, all players—including him—behaved quite differently than expected: "not like friends, but as strategic competitors." Another player adds: "I have liked things I hate, and I put dislikes on what I would usually appreciate."

What happened? With SQS, we created a speculative version of a possible future social network, facing the players with fictional features they are not yet

familiar with. The core feature was a 'frictionless quantification' algorithm—deliberated from any technology. Instead, every player received a set of cards to perform an action, a paper-made profile that looks similar to a performance dashboard, limited resources (energy, health, popularity), friends, and feedback icons (like, dislike).

Figure 6: Different Designs of Preenaction Game SQS

Source: Klaus Gasteier, Gerald Dissen, the author

At first glance, the game looked like an analogue simulation of already known digital media tools. Through play, however, the fictional contract of SQS (FC_2) became incommensurable with the fictional contracts the players would usually follow in a social network (FC_1). Lying, showmanship, and passivity were impossible; everything was visible and evaluated by a speculative algorithm. The only private information was the individual goal that each player selected for her future. However, this goal was hard to achieve by adopting familiar operative fictions (FC_1): Players were unable to design their digital selves. They were reduced to the traces of the data they produced in the game. Facing this uncomfortable reality, some players behaved like opportunists, others even jumped out of the game. And we have also observed moments of creative innovation. For example, one player suggested to invent a digital eraser which was the starting point for a new game within the game, a new episode in a series. While enacting

this new feature, unforeseeable vague and ambiguous situations emerged—even new rules and 'plugins' were necessary.

At the end of the day, the players invented distinct time concepts for the physical and the virtual world, and a half-life-period of digital information. They switched between their operative fictions from present reality (FC_1) and the fictional contract that was offered by a speculative social network (FC_2). One group recognized that they pre-enacted a dystopian version of a social network. They argued that they would have played the game differently if they could have foreseen the effect of their actions. They realized that they adopted behaviors to fulfill the social norms that were suggested by the game—without even noticing it (*future scripts*). Thus, they played the game like a persuasive future game—ignoring the scope of freedom the game would have offered themselves to a more preferred speculative social network.

Another group refused to replace their present fictional contract about social networks (FC_1) with the contract suggested by the game (FC_2). They experienced a "clash of realities" and approached the challenge to pre-enact a *third* fictional contract—a hybrid of FC_1 and FC_2, packed with new ideas to shape the reality of social networking (*future particles*). As a result, different groups of SQS-players experienced different transformations of their future memories. Some got more flexible and creative in thinking about possible futures of a digital society, and others adopted a critical attitude to their daily use of social media and self-tracking technologies.

In order to explain how a game like SQS can produce new snippets of future information, it is worth considering the role of the concept "enactment" in more detail. The verb 'to enact' is not just used to describe player activities in a game, it is also used to describe how people make sense of sudden changes in their real-life environment. When Karl E. Weick observed people who 'enact' a new law, he realized that something interesting happens: The law is going to be transformed. People make the law suitable for their contexts. They interpret it and "take undefined space, time, and action and draw lines, establish categories, and coin labels that create new features of the environment that did not exist before."[41] The same happens when people play a game: The rules of the game are abstract and general—they have to be interpreted in situations that even the game designer could not have foreseen. Sometimes, players even invent complementary rules, or sub-rules that are specific for their cultural context and could not be understood by people that are not part of the game.

41 Weick, Karl E.: *Sensemaking in Organizations*. London: SAGE 1995, p. 31.

These examples show that people—no matter whether they are involved in a game or another social reality—do not simply "react to an environment, [they] enact [...] it."[42] Applied to the design challenges of a preenactive future game, this means that the game should be built on rules, open and ambiguous enough that players will enact new features that could not have been foreseen. Further, they need to be planned as a series of episodes in which each new episode includes the new features that have been enacted in a former episode. Thus, a Preenactive Future Game is always unfinished. It is produced and completed through play.

In SQS, players experienced a clash of realities because they found themselves in a situation that, on the one hand, triggered their memories of contemporary digital social networks (FC_1). On the other hand, familiar categories of distinction—like *public* and *private*, *technology* and *humankind*, *friends* and *competitors*—did not work anymore as SQS introduced conditions of "frictionless quantification" (FC_2): both fictional contracts (FC_1 and FC_2) are present at the same time and face the players with ambiguity. Uncertainty is *increased*. In contrast to a conventional gaming situation, the players could not switch from one reality to the other; obstinate discrepancies and paradoxes had to be resolved.[43]

To achieve their goals, players could adopt to an uncomfortable behavior, or "create new features of the environment that did not exist before."[44] Some players accepted FC_2, other players pre-enacted a *third reality* and found ways to create better conditions for their digital social lives. They got out of a 'black-and-white' way of thinking and saved valuable snippets of future memory. Both types of players generated new future memory particles that can be taken out of context and be combined with particles from other fictions about the future. Such particles include very small snippets for the episodic memory (such as an emotion, a mental image of a place, or a story fragment), and ideas that are of practical relevance, such as a product, a feature, or a service. Either way, as they are a) created from a first-person view, and b) shared by all players, they remain available as snippets for mental time travel when players are back in FC_1.

42 Ibid., *The Social Psychology of Organizing*. Mass.: Addison-Wesely 1969, p. 64.

43 Games that establish "moral dilemmas" are comparable here, cf. Sicart, Miguel: "Moral Dilemmas in Computer Games," in: *Design Issues* 29/3 (2013), pp. 28-37.

44 See footnote 41.

CONSEQUENCES FOR THE GAME DESIGN PROCESS

In the last section, we share some findings from a series of "research through design"[45] experiments.[46] In order to create a preenactive gaming situation, the aesthetic qualities of a game and the epistemological principles of scientific experiments had to be combined. This led to the following selection of game design patterns. Some of them are well-known from other game design processes, but others are more unusual and challenge the canonized repertoire of game patterns.

- Players may feel uncomfortable in acting against dominant fictional contracts, especially in an organizational context. Thus: Mark *a clear beginning and ending* and be sure that players participate voluntarily!
- Players should import their current memories into the game. Start with an incomplete game and let the players *fill in the gaps*!
- Design for *blank spaces, ambiguity*, and *vagueness*! In order to enact new features of an environment, players need to become co-designers of the game.
- Support the players to create *speculative self-narrations*! This way, they experience possible futures from a first-person view.
- Don't use *reward models* that tell the players what is 'good' and 'bad.' Challenge them as "players and as cultural beings outside the game"[47] and encourage them reflect on their decisions![48]
- Allow players to *slow down* when they make a decision! Every moment of hesitation could be the starting point of a new memory snippet.
- Provide *equitable conditions* for all players! Do not judge the fictional contracts players rely on outside the game.
- Create *subtle* clashes of fictional contracts! Avoid predictions, obvious trends, and mythic and dominant u-/dystopia. Make clear that the *differences* are important, not the content.

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45 Frayling, Christopher: *Research in Art and Design*, London: Royal College of Art 1993.

46 Conducted by the author at the Berlin University of the Arts and with Goolin pre:experience studio.

47 M. Sicart: "Moral Dilemmas," p. 34.

48 *Paidia*, Redaktion: *»I'll remember this«: Funktion, Inszenierung und Wandel von Entscheidung im Computerspiel*, Glückstadt: Hülsbusch 2016.

- Start with a sympathy for imperfect and transitory, rather than 'high definition' designs! Use simple, inexpensive, and easy to change materials and tools!
- Players should collect lots of different future particles from different perspectives. Thus, prepare for a series! Each version of the game is just the starting point for the next version.
- Make sure that all involved people follow an "ethical" and "aesthetical imperative": "Act always so as to increase the number of choices." And: "If you desire to see, learn how to act."[49]

CONCLUDING REMARKS

This article investigated how games can increase human capacity to face uncertain futures and deal with unsolved future problems. Future Games were defined as 'fictional contracts of the second order' that either support or disturb familiar concepts of reality, and that either provide a complete idea of a possible future, or invite the players to an experimental co-design process. The resulting typology of Future Games allows for an emphasis on the epistemic means of games without having to strain the problematic concept of 'seriousness.'[50] One type of the typology, Preenaction, was investigated in more detail. As a result of a series of experiments, the author found that Preenaction Games cannot be considered as designed artifacts. As those games confront both the game designer and the player with an uncertain situation, new paradigms of game design and game play had to be discussed. They question the distinction of *designing acts* and *acts of playing*, as well as the separation of roles in such a process.

The author believes that there are good reasons to engage with such an irritating proposal, anyway. In our accelerating modernity, we need tools that can be adapted to new challenges quickly. Designing games with simple materials, without any programming skills or design expertise needed, enables organizations to experiment with possible futures spontaneously and with limited resources. Ill-defined games that open up experimental frames and support 'clashes of realities' are highly welcomed as they create experiences that depend less

49 Foerster, Heinz von: *Understanding Understanding*, New York: Springer 2003, pp. 227, 303.

50 S. Roth: "Serious Gamification."

on the aesthetical preferences, ideological beliefs, or strategic interest of just one author (or one group of authors).

Successful Future Games cross several disciplinary barriers, cultures of knowledge, and practical expectations. They serve as ongoing real-world experiments that strive for "trading zones".[51] Game enthusiast are still worried that such games could occupy our ludic drive for political and economic purposes. Entrepreneurs still fear that a game might not engage with their serious problems seriously. Scientists still indicate that designing and playing games does not fulfill the requirements of reliable knowledge construction. And designers still find it hard to accept incompletion and continuous iteration as final step of a design process. As the future will not stop at today's frontiers between disciplinary fields, we should develop tools that can bring together actors from heterogeneous backgrounds. Playing a (future) game together could be something like a lowest common denominator.

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51 Galison, Peter/Biogioli, Mario: "Trading Zone: Coordinating Action and Belief," in: *The Science Studies Reader*, London: Routledge 1999, pp. 137-60.

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My Hyperideal Self

Identification and Objectification in Digital Games

NINA KIEL

"I'm... I'm fine," Joel says, breathing heavily. Clearly about to break under the weight of his own body, the bearded man with greying hair and a scarred face limps forward, groaning in pain with every step he takes.[1]

The visualisation of our virtual selves has changed a lot in recent years. The characters we play look more and more realistic—and this is not only due to better graphics. Another important reason is the increasingly mature and serious content of games. Since developers have grown older—just like their audience [2]—they have been trying to tell more stories they can relate to as grown-ups or even as parents.[3] Their lives changed—and so did their games.[4]

It is not surprising, then, that there is some variation nowadays from the heroic masculine archetype that still dominated games in the early 2000s. Protagonists like apocalypse survivor Joel from THE LAST OF US, the troubled father Ethan from HEAVY RAIN, or the drug-addicted, moody Max Payne from the latest iteration of the eponymous game series represent just a small fraction of the variety of male role models available nowadays.

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1 https://www.youtube.com/watch?v=V29RMh0oN08, accessed February 19, 2017.

2 http://www.theesa.com/about-esa/industry-facts/, accessed February 28, 2017.

3 Voorhees, Gerald: "Daddy Issues: Constructions of Fatherhood in The Last of Us and BioShock Infinite," in: *Ada: A Journal of Gender, New Media, and Technology* 9 (2016).

4 www.pcauthority.com.au/Feature/390768,growing-up-parenthood-and-videogames.aspx, accessed February 26, 2017.

Despite their obvious flaws, however, these and other game protagonists are still idealised. They are much stronger, more resourceful, intelligent and attractive than the average human being and most of these traits are necessary to create the notion of empowerment players are supposed to feel while exploring many of the virtual worlds accessible through PC and console. Assuming the roles of these *improved* humans provides agency and allows players to overcome obstacles against all odds.

Without idealised characters, many common game scenarios just wouldn't work, like saving the world from an alien invasion or surviving on a deserted island full of dangerous animals. In these scenarios, assuming the role of a person who quickly turns into a strong-willed survivor is necessary for successfully reaching the end of the story. This is why a young, inexperienced Lara Croft manages to transform from an insecure archaeologist-to-be into an incredibly competent gunwoman in a mere hour of playtime of the 2013 TOMB RAIDER reboot.[5]

However, game characters are not always idealised in the same manner. Our perception of the ideal can vary greatly depending on the context, which is especially true for visual representations. During the Italian Renaissance,[6] for instance, curvier bodies were perceived as the female ideal, since this Rubenesque[7] body type represented wealth and, more importantly, fertility. By contrast, in the last century the beauty standard for women in Western societies has shifted strongly towards thin bodies and these are still in fashion, though there have been minor changes over the years concerning the perfect height and weight.

Since games have emerged, the ideal of the slim, fragile woman and the strong, muscular man was always present, so it is not surprising that these two body types can be found in a great variety of games, from platformer games to beat'em-ups and ego shooters, and in their respective marketing campaigns. Interestingly, these limitations are even present in games which provide character modification options, sometimes enabling the players to create avatars with blue skin or impossible facial structures.

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5 http://www.newstatesman.com/culture/2013/03/even-lara-crofts-grown-makeover-cant-hide-tomb-raiders-lack-ideas, accessed 28.02.2017.

6 Mary, Rogers: "The decorum of women's beauty: Trissino, Firenzuola, Luigini and the representation of women in sixteenth-century painting," in: *Renaissance Studies 2* (1988), pp. 47-88.

7 https://www.nationalgallery.org.uk/artists/peter-paul-rubens, accessed February 28, 2017.

While many of these games allow for creating heavily muscular, bulky, and sometimes even obese male characters, these same options are rarely provided for female characters, narrowing their scale of options from thin to slightly curvaceous. Additionally, female characters are on average younger and conventionally more attractive than their male counterparts, which is particularly obvious in games in which character selection screens present a male and a female version of the same character or class.

Figur 1: A Male and Female Orc

Source: World of Warcraft.

A particularly good example for this is WORLD OF WARCRAFT, the world's most-subscribed MMORPG for which, according to developer Blizzard, more than 100 million accounts have been created so far. The orcs[8] and trolls in particular—monstrous creatures with huge teeth and distorted faces—look quite different depending on their gender. In contrast to the hunchbacked men with their exaggerated features, the women of these two races look more human-like, due to their erect posture and their lifelike proportions. Furthermore, the faces of both, female trolls and orcs, are much more similar to the human form, with significantly smoother skin and tiny teeth (figure 1.1).

These are only two examples emphasizing the distinctly different ways in which men and women are commonly portrayed in games. Though hyperidealised male protagonists are often presented as unusually strong and attractive, they represent a wider range of ideals [9] that is further expanded by unusual heroes, which can be nerdy and highly intelligent, lazy, fearful, or even morally corrupted. The best-known of these unusual heroes is, of course, Super Mario—a

8 http://www.gamespot.com/articles/world-of-warcraft-female-orc-character-revamp-revealed/1100-6417850, accessed February 28, 2017.

9 Martins, Nicole, et al.: "Virtual muscularity: A content analysis of male video game characters," *Body image* 8 (2011), pp. 43-51.

feisty Italian plumper with superhuman strength and considerable courage. Even though Mario is heavily stylised and idealised to look younger and more resourceful that he would in real life, he still represents a very unusual figure to aspire to.

This range of aesthetics is only narrowed in action-focused and particularly in shooter games. With their short dark hair, muscular bodies and designer stubbles, many of these protagonists look strikingly similar—so much so that online memes[10] frequently assume they must be related. Since these characters are always white males in their thirties, however, they can be considered as the idealised version of the games' audience and thus as being designed to appeal to male players first and foremost. Meanwhile, most female characters are not designed to solely attract female gamers, but male players, as well.

Figure 2: Playable Female Characters (from left to right: Metroid: Other M,Soul Calibur IV, Bayonetta, Resident Evil 3, Street Fighter IV)

Many of these hyperidealised young women are thin and busty at the same time, often leading to an unattainable body ideal.[11] Most of them are also depicted as

10 http://knowyourmeme.com/photos/787777-video-game-logic from February 28, 2017.

11 Harrison, Kristen/Martins, Nicole/Williams, Dmitri: *A Content Analysis of Female Body Imagery in Video Games*, Paper presented at the annual meeting of the NCA

very feminine with long hair, make-up, high-heels and close-fitting dresses that highlight their body shape and their breasts in particular (figure 1.2). Another example of the resulting aesthetic differences in male and female characters is the online free to play shooter game WARFACE. In this game, players can choose one of four classes for their avatar, providing different skills for combat, but the same protective attire, including bulletproof vests, glasses and/or helmets as well as camouflage overalls. However, when the developer first introduced female *skins*—cosmetic changes that have no effect on a character's handling—these looked notably different: Unlike her male counterpart, the female sniper showed cleavage, the female rifleman fought with an exposed midriff and both had no bulletproof vests to protect them.

According to developer Crytek, these differences in design resulted from audience demands.[12] Specifically, executive producer Joshua Howard said that "the female skins [are] a good example of how we see how culturally the different regions approach the same game in different ways". He then added that

> "the skins we're showing right now are the skins that basically came out of our Russian region. They're not what our players at first requested in the Russian region. They tended to be considerably more extreme than what we ended up shipping with."[13]

User demands solely affected the designs of the female soldiers while the male fighters looked identical in Russia, China, and the US. Only after facing criticism from players as well as the gaming press, Crytek decided to remove the female skins entirely and announced to bring them back into the game once reworked.[14]

Interestingly, these narrow ideals that highlight the beauty and sexiness of female characters first and foremost can even be found in games that supposedly strive for diversity. Shortly after announcing OVERWATCH in 2014, Blizzard explained that the game was designed to be diverse and to include players from

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94th Annual Convention, TBA, San Diego (2014), see: http://citation.allacademic.com/meta/p259038_index.html

12 http://www.pcgamer.com/crytek-explains-sexualization-of-female-soldiers/, accessed February 27, 2017.

13 http://www.wired.co.uk/article/warface-joshua-howard accessed, February 27, 2017.

14 https://twitter.com/warface/status/394834971073839104?lang=de accessed, February 27, 2017.

all walks of life. Former Senior Vice President of Story and Franchise Development Chris Metzen said:

"We build games for everybody. We want everyone to come and play. Increasingly, people want to feel represented, from all walks of life, boys and girls, everybody. We feel indebted to do our best to honor that. There's a lot of room for growth, but specifically with OVERWATCH, over the past year we've been very cognizant of ... trying not to oversexualize the female characters."[15]

Figure 3: The First Set of OVERWATCH Characters that was presented to the Public

Source: OVERWATCH-trailer

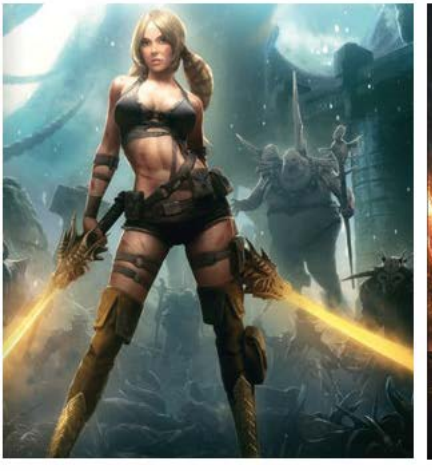
When the first set of playable characters was introduced to the public, however, it became obvious that the developers would not be able to meet their goal. While five of the twelve characters were female—which is an unusually large number, especially for a competitive shooting game—they all shared the same body shape, with four of them wearing skin-tight clothing. By contrast, the male characters covered a much wider range of shapes and sizes, with the muscular Samurai Hanzo, the slender Robot Zenyatta, a big Gorilla named Winston and an old dwarf called Torbjorn (figure 1.3). Again, only after facing criticism for a very narrow representation of womanhood, Blizzard introduced two characters

15 http://www.polygon.com/2014/11/8/7176861/blizzard-overwatch-diversity, accessed February 27, 2017.

that deviated from this ideal. Now players can choose the former weightlifter Zarya or the 60-year old bounty hunter Ana.

In both cases—the heated discussions surrounding WARFACE and OVERWATCH—some fans complained that male characters were equally sexualised and objectified in games.[16] Since this false equivalence occurs very often in discussions about games and sexism, it needs to be addressed time and again. [17] A common example used in this discourse is Kratos from the GOD OF WAR series who fights his way through every game wearing nothing but heavy gloves, boots and a loincloth. His visualisation, some argue, is not different from a female warrior wearing a chainmail bikini or lingerie. However, this argumentation solely focuses on the characters' attire while neglecting other important aspects, such as their pose and facial expression.

Figure 4: Kratos from the GOD OF WAR series and Ayumi from BLADES OF TIME. Note how Kratos' swords point upwards to add to his hostile demeanour, while Ayumi's weapons point downwards, further emphasizing her harmlessness.



Source: God of War

16 http://www.popmatters.com/post/151713-on-mens-sexualization-in-video-games/, accessed February 28, 2017

17 https://www.forbes.com/sites/insertcoin/2012/11/28/the-one-sided-problem-of-oversexualization-in-video-games/#618e16a355ff, accessed February 27, 2017.

Kratos is commonly depicted as a very aggressive, even hostile man whose standing position emphasizes his confidence. In comparison, many female protagonists—the scantily clad among them in particular—pose in a way that highlights their hips and breasts instead of providing a strong position on the ground. Thus, they look as if they were posing for an invisible camera—and for the assumed heterosexual male audience behind it (figure 1.4). As a result, half-naked male characters are commonly perceived as particularly powerful—since they don't need protective armour to survive—while female avatars are perceived as sexy and desirable.

Of course, there is nothing inherently wrong with portraying a character as a sexual being, as long as this portrayal works well with the fictional personality and highlights their agency. If this agency is taken away or if a character's body parts are constantly highlighted as being the most (or one of their most) important features, however, this leads to sexual objectification. Sexual objectification means that a character is treated as a shape instead of a person or as an object that does not act itself, but is acted upon. The main purpose of such an object is to sexually appeal to someone else or to be *used* by someone else—for example as a trophy, as a story device or as an actual item to be carried around. To quote Feminist Frequency's TROPES VS. WOMEN IN VIDEO GAMES series:

"Sexual objectification is the practice of treating or representing a human being as a thing or mere instrument to be used for another's sexual purposes. Sexually objectified women are valued primarily for their bodies, or body parts, which are presented as existing for the pleasure and gratification of others"[18]

While many commonly-known and easily identifiable examples of (sexual) objectification exist in games—like Princess Peach from the MARIO franchise, who acts as a trophy for the hero/player, or the eroticised marketing material for the first TOMB RAIDER games—it can also be more subtle and difficult to recognise. For instance the 2010 film noir thriller HEAVY RAIN invites its players to assume the roles of four deeply flawed characters, three of which are male. The only female character, Madison Paige, is a young journalist who at first only follows a series of murders to get a good story. After meeting the troubled father Ethan who tries to save his son from the unknown serial killer, though, Madison decides to help him.

18 https://feministfrequency.com/video/women-as-background-decoration-tropes-vs-women/, accessed February 27, 2017.

One sequence of events leads Madison into a night club whose owner can supposedly provide helpful information to uncover the killer's identity. After a failed attempt to get the club owner's attention, the players have to change their female character's appearance by applying make-up, unbuttoning her blouse or trimming her skirt. The club owner now invites her to his private quarters, but immediately threatens to kill her if she refuses to strip for him. In the following scene, instead of seeing the events through the character's eyes, the players looks *at* her while the intimidated women slowly undresses, also adopting the perpetrator's perspective now and then. This leads to the voyeuristic and erotic framing of a scene which is supposed to be deeply disturbing for the character herself, even zooming in on specific body parts like her bottom.[19]

Figure 5: Madison Paige strips at gunpoint to please the club owner

Source: Heavy Rain

In her 1975 essay "Visual Pleasure and Narrative Cinema," the film theorist Laura Mulvey refers to this perspective as the "male gaze," which means that the camera adopts the perspective of a male viewer whose eyes linger on a female body that is shown to be desirable. Such a shift in perspective turns the character into something to *look at* instead of someone to *identify with*.[20] This kind of sexual objectification is mostly applied to female characters and it very much

19 https://www.youtube.com/watch?v=1m9KpwIF6rs, accessed February 28, 2017.

20 Mulvey, Laura: "Visual Pleasure and Narrative Cinema," in: *Screen* (1975), pp. 6-18.

limits the player's opportunity to feel their struggles and to fully identify with them.

Still, one question commonly asked when discussing female objectification in games and other forms of media is: Why should we care about it? After all, game avatars are fictional people without thoughts or feelings, so it is assumed that treating them as victims, trophies, or simply objects to look at has no consequences. This, however, has been proven wrong by several studies analysing media products in general and games in particular.

Recent studies suggest that playing with hyperideal characters can increase body dissatisfaction and also lower the self-esteem in both men and women.[21] The effect on men is particularly interesting, since this could mean that the so-called power fantasies we see in games actually have the opposite effect. As opposed to this, female participants in one study tended to report slightly more positive body attitudes after they played a hyperideal female character in a fighting game.[22] The study's authors assume that this is due to the so-called *Lara Phenomenon*, which states that playing as a powerful woman may make female players feel better about themselves, even if this character is presented as hypersexual. Apparently, it's the agency that matters most in this context, so unsurprisingly, studies in which the focus of attention was on the hyperideal bodies of more passive female characters created very different results.

The female participants showed a substantial decrease in body esteem and self-esteem. On top of that, assuming the role of a heavily sexualized and objectified character sometimes led to increased self-objectification.[23] This means that a person sees themselves through the eyes of others and that they learn to value themselves based only or mainly on their appearance—a process that has been tied to disordered eating and depression among other conditions.

These are severe problems to be taken into account, even if scientific work in this field is unfortunately still scarce and the results of current short-term studies

21 Barlett, Christopher P./Harris, Richard J.: "The Impact of Body Emphasizing Video Games on Body Image Concerns in Men and Women," in: *Sex Roles* 59 (2008), p. 586.

22 Lynch, Teresa/Martins, Nicole/Matthews, Nicholas L.: "Real ideal: Investigating how ideal and hyper-ideal video game bodies affect men and women," in: *Computers in Human Behavior 59* (2016), pp. 155-164.

23 Bailenson, Jeremy N./Fox, Jesse/Tricase, Liz: "The embodiment of sexualized virtual selves: The Proteus effect and experiences of self-objectification via avatars," in: *Computers inHuman Behavior* 29 (2013), pp. 930-938.

are often contradictory. On top of that, potential harm concerning the perception of the self or others is not the only important reason for challenging and diversifying our understanding of the ideal self. Another one is, simply, representation. As PBS Game Show host Jamin Warren states, "media serves as a marker to let members know that their group carries weight in society."[24] Conversely, people underrepresented in the media may feel less important and appreciated.[25] This has been suggested to be an important source of low self-esteem, especially for members of ethnic minorities.

To conclude, the mere concept of idealising heroes is not problematic, but it should be analysed and discussed to broaden the general understanding of the ideal. More and more games nowadays include strong, capable, and relatable characters, who may be perceived as idealised or even clichéd, but together they represent a wider spectrum of humanity and beauty. Therefore, this plea for diversity should not be understood as limiting creative freedom. It is an opportunity to fully explore the medium's potential to tell new and interesting stories from unusual perspectives.

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Play It Again, Sam

MICHAEL ERLHOFF

1. SOME PARADOXES OF VIRTUAL REALITY

One day a young boy in the subway commented to another: "And then I was dead."

I was astonished because the boy was standing next to me and was still very much alive. Nevertheless, he and the other boy were not astonished, rather they carried on their conversation matter-of-factly, talking about the sensation of death and its conditions.

Of course, the boy had played … something. Probably a game, but maybe something else, or he had had a dream. Which exactly it was, wasn't clear from the context of his sentence, which established that he had been dead the day before.

Evidently, play opens up the possibility of blurring the line between what is real and what is virtual. Indeed, this blurring of boundaries is something that can preoccupy anyone who has ever played a game (or studied a game, e.g. *Half-Real* by Jesper Juul).

The reason for this might be our inherent drive to play. And of course, there are a lot of intelligent theories explaining that what we call "reality" is constructed by our desires, fears, and dreams.

2. PLAY AND PLAYS

"Play describes an activity that is pleasant in itself." (Immanuel Kant)

We all play and are capable of finding possibilities to play wherever we are. To relax, to survive, to win, to risk, to break rules, to meet other people, to es-

cape from the stresses of everyday life, to calm down, to explore alternatives, to move faster, to do what we are typically not allowed to do. We read novels, listen to the radio, watch movies and TV, visit the theatre or the opera house, play games and tell stories—all to escape what we call *normal*; to open up possibilities for another life. We are continually in the pursuit of freedom. One could quote the 'Poet of Freedom', Friedrich Schiller: "Man only plays when in the full meaning of the word he is a man, and he is only completely a man when he plays."

Indeed, people even play when they are at work: they might arrange and rearrange their desks as if there office were a playground; each morning they dress themselves up in costumes appropriate for the role they want play; or they play mobile games on their smartphones. Even bicycles or cars could be used *playfully* to start a race, to spontaneously explore the city, to entertain (or provoke) passersby with loud music or the revving of the engine, and, of course, to speed and break traffic rules.

And, what's more: we all want to believe that inanimate objects are actually sentient, active subjects (reference to Anthropomorphism?). We describe a glass falling off a table as if the glass had purposefully run and then jumped off the table. In the same light, we seem to be convinced that a telephone rings, a car drives, and an airplane flies all on their own accord. Clearly, we should know better, but we seem to enjoy this ongoing drama led by (in)animate objects. By the way, anthropomorphism sometimes might even help us cope with car crashes or shattered glasses—allowing us to shift the blame to the objects themselves.

All of the above demonstrates our propensity to believe in virtual reality, and to enjoy doing so. Here we might agree with Novalis when he writes that "to play means to experiment with chance operations," as this opens up a pathway around claiming responsibility for anything. But at the same time, we might seriously consider Albert Einstein's claim: "play is the most advanced form of research." Of course, play helps us overcome the common ideology of linear, logical structures and moves us towards the importance of playful, non-linear associations—including mistakes and misunderstandings—as an important source of innovation (the only required competence is the openness to understand the innovative qualities of interesting mistakes, misunderstandings, and chance operations).

Furthermore: Play can lead us to believe that we're having fun when in fact we are working.

3. EMBEDDED IMAGES

"The poetic image is the play of imaginations, and the play offers the image of activities." (August Wilhelm Schlegel)

There is nevertheless a very strange and complicated problem concerning the images mentioned above as any form of play tends to get lost in myriad narratives. While social, cultural, and even economic processes might appear as very chaotic in nature, most types of play and games are indeed based on strict internal rules and linear narratives. There is always a precisely defined starting point; there are clear rules to follow as well as organised relationships and groupings; and there is a clearly-delineated final goal.

This seems completely paradoxical: people escape into play and games to avoid the strict structures and limitations of daily life, but they end up bound within rigorous systems and pre-defined narratives.

Almost all games (there are but a few exceptions) reproduce banal social hierarchies—for example, in CHESS you have a hierarchy among player pieces: the King, the Queen, the Bishop, the (lowly) Pawns, among others. A central element of the narrative of chess is that this hierarchy also represents power; you offer the Pawns to be captured or killed off and you only avoid the loss of the Queen at all costs. The same is true for card games and for most other games—you might have a game like MONOPOLY that is based on simple capitalist rules.

This structure is even worse in computer games, as so many of them are tightly bound to Medieval fairy tales only slightly updated with tropes and design elements from science fiction. There seems to be no escape: you are pulled into a story and must act within a given system. Freedom is fictitious.

It really is bizarre: The fundamental reason for playing derives from a dream of freedom, of an endless universe in which you can do what you want without any barriers—but, as players, we too often find ourselves trapped within strict rule sets and tyrannical narratives. Though players long for the freedom to find their own way and make their own decisions, player agency is stifled by design strategies that feature overbearing guidance systems and rigid rule structures. Instead of liberating images and open design trends, players encounter a fictitious reality full of images of safety and security. Indeed, this is absurd and only perpetuates dogmatic ideologies.

Of course, there are those who only play digital games to master them—as soon as they have accomplished this, they stop playing. In some ways, they act like tourists, moving into a strange culture to discover its rituals and legal structures. Such players might sympathize with the tenets of a foreign culture, but he/she does not live in that culture and does not truly participate in that respec-

tive culture's day to day life. Other players behave more like lawyers, satisfied once they have mastered the law. These are modes of play that, in a way, are paradoxical in nature.

Therefore, to truly harness the fantastic power of play, we have to work on design practices that support the concepts of associative logic, uncertainty, and the blurring of lines (not the reinforcement of boundaries). Of course, we might have to contend with the contradiction that people long for freedom but also require safety and security. Many haven't learned to cope with uncertainty and the blurring of lines. Gaming trends tend to demonstrate this phenomenon.

4. IMAGES OF IMAGINATIONS

This paradox leads to another question that is as interesting as it is open: Looking back at the history of the fine arts and literature, you witness the longstanding (and ongoing) endeavour to reproduce what is commonly known as *reality*. A significant amount of Renaissance art focused on achieving a kind of naturalistic one-to-one picture, a reproduction of the common view of a phenomenon. These artists adopted geometric insights in order to paint 'realistic' images. The curious aspect of this is that before this, people did not complain about the lack of three-dimensional components in images because they were always able to imagine such a painting. Of course, before the Renaissance, the halo, for example, was stuck directly above the head of a saint. Of course, consumers of such art knew that this did not happen in reality.

This way of relating to pictorial reproductions persisted until the end of the 19th century when Romantic artists, followed by the Impressionists, began to explore and react to the impossibility of reproducing nature in all its complexity and ephemerality. With this impossibility in mind, anyone looking at a 'realistic' painting would be confronted with the dissonance between the two-dimensional image and our three-dimensional reality—a discrepancy that directly impacts the viewer's assessment of the work. Indeed, viewing something always involves your past experiences, and so to create something based on what you see, you are inherently also working from previous experiences as well as your thoughts and desires.

Later the fine arts moved towards a much more concrete, that is analytical, form of painting: from Constructivism onwards, via Dada and Surrealism, to the development of the fine arts after 1945 and up to Ad Reinhardt and many others, also in Concept Art etc. (even Pop Art played with this tension between reproduction and analysis).

A similar movement happened in literature: In the 18th century several poets started to understand the power of the human being, now called "Subject". Far removed from fairy tales and other traditional stories in which heroes had no decision-making powers but were instead guided by a kind of God or faith, 18th century poets began to write about what was actually happening. The birth of the novel—nevertheless stories, now concerned with a more serious attempt at reproducing (and commenting on) day to day reality. This escalated at the end of the 19th century with the literary realism (a trend that was also found in the theatre). But Romantic writers and their literary successors revealed how ideological and abstract the aforementioned kind of literature was. The subsequent birth of all kinds of experimental literature (also concrete and visual poetry) could be understood as being analogous to the development of the fine arts: the shift toward establishing truly realistic art instead of mere reproductions.

To be clear: People have always been able to bring their everyday experiences to life; to remember and recreate certain moments and all the images those moments invoke. When we read a novel, our brain conjures up images almost automatically. We feel comfortable with this and we enjoy being encouraged, even provoked, to produce these images, sounds, signs, and processes. We don't need illustrations to do this; in fact, we can't help but produce illustrations of our own. When we listen to the radio, we can't help but construct images from the words being spoken and any other sounds being broadcast. Therefore, it seems that we wouldn't need (nor want) somebody or something pushing us to engage with specific images already produced by somebody or something else.

Nevertheless—and this is very strange—in everyday culture the history of visualisations has developed in complete opposition to how it has developed in the fine arts. Instead of more analytical and experimental attempts to explain the background of an image and instead of integrating the creative potential of people into everyday life, we have been overwhelmed by the development of more and more realistic images (and stories). First photographs were meant to capture reality, but they could not reproduce movement (though we were able to imagine potential movement). To solve this, film was invented; first in black and white (no problem, everyone was able to imagine the images in colour), then with sound and colour, and now in 3-D.

Why? We certainly don't need any of this. Even worse, such innovation has diminished the human potential for imagination and has forced people into an absolutely passive role. We no longer have the chance to be creative; we're left to simply follow the provided images.

Again: We long for freedom and end up in prison—the most secure of places.

5. VIRTUAL REALITIES

A final remark: In a very interesting exhibition aptly titled *Fire & Forget*, you can experience a truly innovative digital game.

In contrast to typical first person shooters—in which the corpses of those you kill simply vanish from the screen—, in this game all killed characters remain on the screen as bleeding corpses. It does not take long for those corpses to pile up: eventually the dead and bleeding bodies completely obscure the player's view.

We reach the end of the fairy tale. But it's still just a story.

Open Development as Disruptive Game Design Practice

ORTWIN FREYERMUTH

Cloud Imperium Games (CIG) launched a crowdfunding campaign in 2012 to create the space simulation Massively Multiplayer Online Role-Playing Game (MMORPG) STAR CITIZEN and its single-player companion SQUADRON 42 in an open development environment with the gaming community. STAR CITIZEN has become the largest crowdfunded project in history[1] and development is ongoing. The rare nature of the STAR CITIZEN project makes it a perfect case study for an increasingly common, new type of game development based around an open and transparent process that is both accountable to the community and deeply informed by it. The community becomes an integral element that helps to develop and shape the game from beginning to end in both small and significant ways.

This article is intended to provide an overview of CIG's approach and central concepts as well as some of the lessons learned to date.[2]

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1 N.N.: *The Guinness Book of World Records,* Stamford, CT: Guinness Media 2015, p. 17, accessed online July 30, 2017: https://www.guinnessworldrecords.com/2015/preview/files/assets/basic-html/page17.html; "The stars are the limit"; in: *The Economist*, Feb 12, 2015, https://www.economist.com/news/business/21643135-video-game-smashes-crowdfunding-records-raising-72mand-counting-stars-are-limit

2 I would like to thank Leon Freyermuth for his significant support and collaboration, as well as my colleagues Carl Jones, Steven Kam, and John Erskine for their valuable contributions.

OPEN DEVELOPMENT VS. TRADITIONAL GAME DESIGN

In traditional game development, the project is conceived and designed outside of the public's eye. If the creator is an independent studio, it usually submits the project to publishers and financiers who try to estimate the potential success of the project based on the performance of previously released, comparable projects. If accepted, they set a budget that the developers are required to stay within when creating the project. The developers do their best to anticipate the gamers' tastes and preferences when designing the project, yet there is no communication with the gaming community at this stage which would allow for the vetting of those assumptions; a situation often referred to as the 'black box' of game development.

During various stages of development, the project is reassessed internally with respect to its potential appeal and success in the gaming community. Quite a few projects are abandoned when these reviews lead to negative assessments. Release dates are adjusted depending on the project's progress, although financial considerations often may lead to cutting feature sets to meet release date requirements.

Figure 1: STAR CITIZEN: Gladius fighters escorting a Starfarer fuel tanker through an asteroid thicket. (Source for all images in this paper: CIG)

A project is customarily only announced officially to the gaming public once it is nearing completion. Typically, at this point the game is already in the final quality assurance (QA) process and is only six to nine months away from the official release. While it has become common (especially with publishers of AAA titles) to invite the gaming community to various 'early access' or 'beta-release' programs, game design is effectively completed at this stage. Such beta testing may be relatively open or closed but, at this point, players are involved in the polishing of a game and not actually in its development. This form of 'community engagement' is mostly marketing-driven to increase advanced awareness of the game and generate word-of-mouth.

Open development[3] lifts the veil on some or all of the game design processes depending on how far along the developer is in the game creation process and to what extent the developer elects to be transparent to the community. Early cases of open development started to emerge just around the time that STAR CITIZEN was announced in 2012, e.g. BROKEN AGE,[4] WASTELAND 2,[5] PILLARS OF ETERNITY,[6] SHROUD OF THE AVATAR,[7] and ELITE DANGEROUS.[8] The developers would share some information about the game development and sometimes also discuss it on livestreams and forums. Unsurprisingly, a number of these development studios used crowdfunding for their projects, which necessitates direct communication with the community.

CROWDFUNDING AND OPEN DEVELOPMENT

Crowdfunding seeks support from the gaming community to fund project development. Accordingly, crowdfunded projects lend themselves to open develop-

3 'Open development' as used and described in this paper is to be distinguished from the form of collaborative development referred to also as the 'open source' model.

4 BROKEN AGE (Double Fine Productions, Inc. 2014, O: Double Fine Productions, Inc.)

5 WASTELAND 2 (Deep Silver, Inc. 2014, O: inXile Entertainment, Inc.)

6 PILLARS OF ETERNITY (Paradox Interactive AB 2015, O: Obsidian Entertainment, Inc.)

7 SHROUD OF THE AVATAR: FORSAKEN VIRTUES (Portalarium, Inc. 2017, O: Portalarium, Inc.)

8 ELITE: DANGEROUS (Frontier Developments, plc. 2015, O: Frontier Developments, plc)

ment, in particular if the studio seeks the continued support of the community after the initial fundraising campaign.

At the same time, crowdfunding poses particular challenges to any project's development and these challenges are exacerbated by open development.

The scope of a project always depends on the development funds available, which by definition are unknown at the outset of a crowdfunding campaign. A responsible campaign initiator will determine and ask for the lowest level of funding needed to complete the development of the basic game as presented. Almost invariably, though, that minimal scope presented at the outset of the project will constitute a creative compromise. If the community embraces a project and contributes more funds than originally asked for—in the case of STAR CITIZEN this occurred beyond all expectations—then this will call for an expansion of the game's scope. Consequently, the scope of any crowdfunded game will need to be flexible and depend on the success of the funding campaign.

The natural combination of continued fundraising with the open development process will put the consequences of any adjustment of scope in full public view. Such consequences may include the need to build up greater studio resources as well as delayed delivery dates for the game, an issue that is particularly sensitive with a community eagerly awaiting its game.

CIG, with its STAR CITIZEN project, took both crowdfunding and open development to new trendsetting heights and in the process faced all of the above challenges. In the following sections I will explain in detail how CIG confronted them.

CIG AND THE STAR CITIZEN CAMPAIGN

Veteran game developer Chris Roberts (WING COMMANDER, PRIVATEER, FREELANCER, etc.)[9] and I founded Cloud Imperium Games in 2012 to develop the MMORPG STAR CITIZEN and its single-player companion, SQUADRON 42.

We knew from previous efforts to reboot Chris Roberts' WING COMMANDER franchise that in the assessment of the traditional publishers there was no interest amongst the gaming community for a PC space simulation game. We considered this a misperception. Accordingly, we decided to seek the support of the gaming

9 Freyermuth, Gundolf S.: *Games | Games Design | Game Studies,* Bielefeld: transcript 2015, loc. 272; Wikipedia: https://en.wikipedia.org/wiki/Chris_Roberts_(game_developer), accessed July 30, 2017.

community directly and launched a crowdfunding campaign on October 10, 2012. Since then, the project has evolved into one of the largest AAA game projects ever developed, with over $150 mill. in development funds pledged by backers to date. Approximately 1.8 mill. users have registered on CIG's proprietary platform at RobertsSpaceIndustries.com, with several ten thousand more joining every month. About 450 CIG employees in Los Angeles, Austin, Manchester, Derby (UK), and Frankfurt a. M. (Germany) are working on the game in a development process that is designed to be open and transparent to the gaming community.

Figure 2: CIG Co-founders Ortwin Freyermuth and Chris Roberts

THE 'VERSE OF STAR CITIZEN

CIG's mission statement is to build a ground-breaking first-person universe that people will live in and explore for years to come. CIG is creating a social and career-based MMORPG with an immense sandbox universe to explore in immersive detail. STAR CITIZEN is set in a 30th-century Milky Way where the newly-formed United Empire of Earth (UEE) is trying desperately to maintain order. Players are given a chance to live their own epic space adventure where they chart their destiny amid a galaxy beset by intrigue, danger, and opportunities for

profit. They decide how to make their way in the galaxy, whether as explorer, mercenary, pirate, merchant, bounty hunter, etc.

Currently, STAR CITIZEN's projected scope includes a playable universe spanning 125 star systems and their environs. Each system will feature numerous meticulously designed planets and moons brought to life with the human-guided application of procedural technology, replete with: multiple landing zones; trading stations with a variety of shops tied into a dynamic economic simulation; service stations to repair, re-fuel, and re-arm ships; security stations to check for missions or bounties; mining stations in expansive asteroid fields; plus many different points of interest, such as abandoned research stations and comets.

Figure 3: SQUADRON 42: Actors Gary Oldman (as Admiral Ernst Bishop) and Mark Hamill (as Lt. Cdr. Steve Colson)

In creating this first-person universe, STAR CITIZEN'S features will include a physically accurate flight model simulating realistic spaceflight, fully operational capital ships with working AI crews and fully explorable decks, and detailed characters who react to and converse with the player in realistic ways, all with the highest attainable visual quality and fidelity using innovative capture and rigging technologies. A Dynamic Mission Creation System enables the game to react to players as they interact with NPCs and other players, which will allow

players to go about their daily lives in realistic and believable ways, while their interactions affect economies, spawn missions, and make or break alliances.

The single-player companion game, SQUADRON 42, is an epic AAA science fiction adventure set in the same universe and featuring a vast story that will be told over the course of three games-— each game will be a full-scale release offering 20+ hours of gameplay. SQUADRON 42 incorporates an A-List cast, including Gary Oldman, Mark Hamill, Gillian Anderson, and many more, whose performances—including both facial and body motions-—were recorded with performance capture technology.

In SQUADRON 42 the player joins the UEE Navy as a rookie pilot and is thrown into a hazardous campaign to combat a sinister pirate threat in the Odin system. The players battle on the front lines of an interstellar conflict between some of the most dangerous factions in the universe, such as the deeply hostile pirate cartels. Stationed on-board the UEE Stanton, a large "Idris"-class navy frigate, the players will interact with fellow crewmen in-between missions and visit the hangar where they can upgrade their assigned ships. During missions, they will be able to decide how to engage enemies and personalize their experience by making critical decisions that can affect the entire campaign.

Figure 4: Actor Mark Hamill being performance-captured as Lt. Cdr. Steve Colson

CIG AND ITS OPEN DEVELOPMENT CONCEPT FOR STAR CITIZEN

For the reasons explained above, the desire to build an open and transparent relationship with the community was at the core of CIG's approach from the outset. Before launching its campaign, CIG created its own proprietary communications and crowdfunding platform,[10] hosted at RobertsSpaceIndustries.com, to interact directly with its backers. This was designed to empower backers so that they may directly signal their interest in the game's vision and its ambitions, and provide real-time reactions and feedback in pace with the development progress.

After the completion of the initial campaign CIG opened its first studio in 2013, and since then CIG's various open development activities have evolved significantly, but they can still be grouped into the same primary elements CIG started out with: keep the community informed and engaged in the development process; post game modules or builds in early alpha mode for feedback and testing; and fund the whole venture with continuous contributions from the community. Each of these elements requires particular functionalities that are provided by the proprietary RSI platform, and that we consider to be an integral and essential part of an open development approach.[11]

In the next sections I will discuss in more detail some of STAR CITIZEN'S particular community engagement concepts and activities, and how the open development process informs and impacts operations on a day-to-day basis. Each of these elements also comes with its own set of difficulties and lessons learned.

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10 The first iteration of the platform was created with limited resources during the self-funded phase prior to the campaign and it proved unable to withstand the enormous traffic generated already at launch, in large part caused by the Wing Commander fame of its creator, Chris Roberts. Despite around-the-clock work on the platform, it was plagued with intermittent crashes, eventually forcing CIG to launch a parallel Kickstarter campaign during the initial 45-day phase. Despite its shortcomings, the RSI platform, which provided direct access to Chris Roberts and CIG as the developer, ended up being twice as successful as the Kickstarter page during the initial campaign.

11 Soon after the initial campaign, CIG partnered with Turbulent Media, an experienced platform specialist based in Montréal, to create a new platform based on proprietary code which serves the various needs with respect to community interaction and the integration of the platform with the game. The collaboration has become so close that Turbulent is treated as another 'CIG Studio,' providing development updates to the STAR CITIZEN community.

COMMUNICATION AND CONTENT FOR THE COMMUNITY

The heart of open development is the constant flow of in-depth information about the creation of the game, allowing the interested community to get a close look behind the scenes at all stages of development from concept to implementation, and to get to know the team executing it. Following these developments and watching 'their' game come to fruition over time seems to have become somewhat of a lifestyle for many backers.[12]

Weekly Shows

Web shows, whether live or recorded, are one of the most accessible forms of communication for delivering this information. This became apparent early on during the initial crowdfunding campaign when CIG hosted a very successful 24-hour marathon web show at the conclusion of the initial 45-day crowdfunding campaign. Since then CIG has produced over five hundred videos across the range of weekly, community-oriented shows with different formats that are regularly updated or revamped to keep pace with the state of development and community sensibilities.[13]

CIG's tent pole show is *Around the Verse*, a weekly 30min show often hosted by Chris Roberts and VP of Marketing Sandi Gardiner or by studio directors and selected lead developers who provide monthly studio updates from CIG's global locations, recapping the development work in detail. The show also includes at least one in-depth featurette about a particular game development topic or tech feature, such as procedural planets, art processes and direction, the music logic system, missions, spaceships, and so forth. Despite (or maybe because of) the tremendous development details covered in this show, the show enjoys a regular viewership every week of over 100,000 gamers—and sometimes many more. One side effect of this constant stream of content is something of a challenge to new backers or community members who arrive *in medias res*, sometimes unsure how to 'catch up' quickly. Existing community members often take it upon themselves to 'onboard' new backers as part of their support for the

12 See, e.g, Parker, Laura: "Fans Pledge Millions For a Chance to Play," in: *The New York Times*, May 11, 2017; Nezik, Ann-Kathrin: "Der 49-Millionen-Dollar-Mann," in: *Der Spiegel*, 32, April 8, 2014.

13 The following description is current as of July 2017.

game, creating a virtuous cycle of engagement between 'veteran' backers and relative newcomers.

Figure 5: STAR CITIZEN'S CEO Chris Roberts and Vice President Marketing Sandi Gardiner prepare for an ATV show recording

Other show formats include *Ten for the Chairman,* a Q&A show hosted by Chris Roberts who answers questions submitted by the community. Similarly, *Ten for the Developers* features a different developer lead each time answering questions about his/her area of expertise. How particular the community interest can become is truly evidenced by the popularity of *Bugsmashers,* an approximately 15-minute show, during which CIG's Senior Gameplay Engineer Mark Abent demonstrates how a bug is fixed hands-on. *Citizen of the Stars* highlights community-generated content, featuring a different content creator from the community every week.[14]

Besides the recorded content, CIG also provides regular live-streamed shows, such as STAR CITIZEN—*Happy Hour*, with the Community Team and developers responding to community inquiries and demonstrating their craft. For example, Character Art Director Josh Herman recently created a 'flying spider'

14 See also below pp. 584f. regarding community-created content.

alien creature concept from a lump of virtual clay, incorporating live input from the community audience.

CIG had to create a Global Video Production team (GVP), separate and in addition to the Community Engagement team, to cope with this production volume. The GVP operates a full studio set in Los Angeles as well as satellite facilities and team members in each of the other studios. These activities are an integral and constantly growing part of the entire operation—a rather unusual fact for a game studio, but a development that is increasingly replicated by other game creators and their publishers.[15]

However, the impact of these activities on CIG's developers—artists, engineers, producers, and so forth—is not insignificant. The development team in particular faces the challenge of dealing with the day-to-day difficulties inherent in developing a complex game, while at the same time having to capture significantly more footage from the game than they would in traditional, behind-closed-doors game development, so that the community's desire for visuals in CIG's video productions can be satisfied. And since the community is eager to get to know 'their team,' they are also sometimes asked to make themselves available for public-facing communications, which may involve even writing their own scripts.

Figure 6: Senior Gameplay Engineer Mark Absent stars in "Bugsmashers"

15 See, e.g, the increased community interactions by Riot Games (LEAGUE OF LEGENDS), Ubisoft (BEYOND GOOD AND EVIL 2), and NCSoft (GUILD WARS 2).

Therefore, many team members have had to take on a dual role as not just a developer, but a public personality who represents the game to the community. Not everyone is comfortable with this public-facing aspect to their role. Such hesitation is understandable: CIG developers were hired for their specific talent as an artist, engineer, or producer rather than as a spokesperson, anchor, or presenter. However, most developers embrace the open development approach and the need to fulfill this dual role as it leads to valuable and overwhelmingly positive community feedback.[16]

Platform Posts

The second pillar of CIG's community-facing communications are regular updates through the web platform. So far CIG has posted over 2,800 stories and other content which consists of both information and material about the game content as well as the development progress itself. The game-related posts include everything from in-fiction lore and backstories to concept designs of ships, environments, weapons, and early-stage game mechanics for an advance look of what is being developed for the first-person universe.

Soon after the initial campaign in 2012 CIG implemented the subscriber program to defray the cost incurred by the numerous community-facing activities. Subscribers receive additional benefits, such as exclusive or early access to certain materials. These include the monthly magazine *Jump Point,* with background stories about the development, additional in-fiction lore, and illustrations which subscribers may also order as a bound hardcover print at the end of the year. The program has been an essential source of support, allowing CIG to build up its communication framework to its current state.

16 In rare cases, there can be some backlash against individual team members for making or describing specific features or designs that subsets of the community are unhappy with. While such problems arising from public-facing activities are very rare, the potential for these issues always needs to be taken into consideration as part of the open development approach.—Another problem can arise from the on-screen presence of certain team members that are frequently chosen to go 'on camera' due to their particular talent at explaining and presenting matters to the community. Every team will have some turnover, and when a public-facing employee leaves it is sometimes necessary to counteract the perception that the team lost someone who appeared irreplaceable.

With respect to development progress, CIG used to post detailed, text-based studio updates until it became apparent that additional audio-visual updates in the *ATV* show[17] with illustrative game footage videos were more informative and conducive to this type of communication. However, since each development stage is open for community feedback and engagement, each missed intermediate deadline and delay is also on full display. Announcing delivery dates to the backer community as part of the updates poses a particular problem for a number of reasons, some inherent to crowdfunding, some to the open development approach.[18]

Interaction with the Community

While providing detailed information about the development process is a crucial element and is a prerequisite to creating an informed community, open development will only work if this transparency is combined with interaction between the community and the development team, talking 'with,' not just 'at,' the community. The community's ability to communicate with the game's creators—combined with the community's realization that its input will be heard—is essential to true engagement in the context of open development.

(Pre-)Alpha Releases of Game Modules and Builds

The most important component of CIG's open development concept, of course, is the backer community's access to early game builds. This allows for iterative interaction in which CIG develops something, shares it with the community, receives feedback from the community, incorporates this feedback, then rinse-and-repeat.

As part of the increased scope of STAR CITIZEN, CIG divided the vision for the final project into a series of modules and phases. These are portions of the game that are released to the backer community as individual elements for them to explore and to provide feedback on. Ultimately, all of these game elements will be fully integrated in the final project. The first such module was the *Hangar* module released in August of 2013, where players were able to view their ships from the outside and later enter them once they had been modeled and made 'hangar ready.'

17 See above p. 573.

18 See in more detail below "Open Development—The Community as Publisher."

Figure 7: STAR CITIZEN: The RSI Aurora spacecraft

In late 2014, the flight training module *Arena Commander* followed. *Arena Commander* allows aspiring STAR CITIZEN pilots to train their flying skills without risking their hard won or expensively purchased ships. Players engage in dog-fights against AI or against other pilots, if they wish to test their skills against real members of the international STAR CITIZEN community. In the release-version of STAR CITIZEN this flight simulation module will be integrated in an immersive fashion with its own in-universe justification.

STAR CITIZEN *Alpha 1.0* went online in 2015—it included a Social Module, allowing players for the first time to interact with other players and to explore the first planet-side locations. At the end of 2016, STAR CITIZEN *Alpha 2.0* introduced more extensive gameplay—limited persistence for players and 20+ missions as well as *Star Marine*, a first-person shooter functionality in STAR CITIZEN. As of the writing of this paper, CIG is readying the release of *Alpha 3.0* which will introduce procedural planet environments, full persistence, an early game economy, and various new environments including moon stations, ship derelicts, etc.

The feedback received from the community on these early alpha releases is fundamentally helpful on both a micro and macro level. On the macro level, designers receive valuable feedback from player experiences. They may find that particular functionality or content had the team extremely thrilled, yet the community, while not objecting to it, may react significantly less excited, and vice-versa. As one of the major benefits of open development, this quick and definitive feedback enables the developer to quickly shift its resources toward building

or enhancing game features and functionalities which are more important in the long run both for the developer and the community.

There are other methods of community input providing further feedback. For example, based on the pledge activity for a particular ship concept being far more significant than for another, CIG may decide to re-prioritize the ship development schedule so as to provide a larger number of players with their ship sooner. Also, occasional polls provide important insights as to what players are looking for. Nobody at CIG expected, for example, that the most sought after role in STAR CITIZEN would be that of the explorer rather than traditionally combat-dominated roles like the mercenary or the pirate. This sort of constant interaction with the community eliminates the 'black box' element of game development[19] to a certain degree and can be very motivating for the team.

Figure 8: STAR CITIZEN: In-game space combat

Again, there are potential pitfalls to live-hosting pre-alpha releases (referred to as "live-ops") while still being in the middle of development. With every new feature set being introduced iteratively into the game build, some other feature, which was previously working well, may break down. Immediate reactions after a new release by a community which had come to appreciate the now-broken feature can easily become the 'squeaky wheel,' forcing the developer to pull resources from the development side to fix the live-ops problems. It is important

19 See also above "Open Development vs. Traditional Game Design."

to cordon off certain developer groups so that dealing with the live-ops problem of the moment does not distract too much from the focus on the overall development of the game.

CIG has further mitigated this problem by creating a Public Testing Universe (PTU) into which a new build is introduced first and where it exists in parallel with the main Persistent Universe (PU) of the game. Backer access to the PTU is increased gradually, based on the growing stability of the new build, before it is released into the main PU for all backers.

Evocati and Issue Council

In effort to prevent live-ops issues as much as possible, CIG created the Evocati backer group,[20] which currently has about 700 members. The Evocati members are individually selected by the Player Relations team on the basis of their playing activity, experience with STAR CITIZEN, and their willingness and ability to report issues in the game. Each member signs a Non-Disclosure Agreement and receives access to very early builds of new releases. CIG considers the Evocati an extension of the QA department and highly valuable contributors to the development effort.

Another source of valuable feedback is the Issue Council. Any backer who wishes to subscribe to the program may report a bug via a special interface on CIG's platform. Their submissions will be reviewed and confirmed by other backers who report replicating it. Once the bug has received a certain number of confirmations it is automatically entered into CIG's bug-tracking system, where developers pick it up and resolve the bug. This allows the team to prioritize their bug fixing based on how frequently bugs are encountered by the actual player group, and how important they are to them. With these pre-release builds being tested by thousands of players, CIG becomes aware of and fixes many bugs that may otherwise have only been discovered much later in the process.

As of now, the Issue Council has over 13,000 contributors who have posted a combined 250,000 comments with over 5,000 confirmed bugs that were automatically entered and then fixed.

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20 Evocati (singular: Evocatus) was the Latin term for a soldier in the Roman army who had served out his time and obtained a discharge but had voluntarily enlisted again at the invitation of the consul or other commander. Wikipedia: "Evocatus," *Wikipedia*, https://en.wikipedia.org/wiki/Evocatus, accessed July 31, 2017

Spectrum

In February of 2017 CIG released Spectrum, a proprietary social networking platform developed for STAR CITIZEN. Spectrum enables a combined in-game and real world presence, visibility, and communication between the players (soon including VoIP) and incorporates Reddit-style forum capabilities. It is poised to revolutionize communications among the STAR CITIZEN community and bridge the gap between the virtual in-game and the real world social spheres. To provide a sense for the volume of the interaction with, and among, the community: CIG has over 70,000 different forum channels configured across various public and private forum instances with over 3.3 million comments posted. For the live chat system, over 160,000 different "chat lobbies" have been set up across the public and private instances with over 4.3 million messages posted. CIG's Community Team is constantly monitoring and responding to comments and concerns, and developers will chime in as well for clarification, where needed.

As with other elements of CIG's public-facing open development approach, there are also a few potential pitfalls such as becoming too distracted by highly vocal minorities—often consisting of just a handful of people—with strong opinions and preferences which are not, in fact, supported by the community at large. It has been important for the team to learn how to gauge these interactions, so that the community's opinions on various topics can be properly determined.[21]

Events

CIG organizes two major fan events every year. During the annual Gamescom convention in Cologne, Germany, CIG will host a backer event for 1,000-1,500 guests (depending on the venue). The event is live-streamed and the recording subsequently made available on YouTube. Chris Roberts and other team members give extensive presentations about team and company developments as well as, most importantly, the latest features and tech about to come online for the game. These in-game updates are demonstrated in live-play on stage, providing a look into the realities of development and a testament to the relationship that

21 In this regard, it sometimes has proven necessary to distinguish actual backers and contributors from persons who may pretend to be a genuine member of the community but are, in reality, hoping for the project to fail. However, it is mostly the community itself which polices these sorts of events and ferrets out the pretenders even before the Community Team becomes aware of their posts.

exists between the community and the developers. Attendees come from all over the world and many have become regulars—often bringing along their families or fellow *Star Citizens* from their player organizations.[22] The second regular annual event is CitizenCon, the STAR CITIZEN Anniversary in October.[23] It is held each year in the city of a different CIG studio, i.e., in Los Angeles, Austin, Manchester, or Frankfurt. The format is similar to the Gamescom event, yet with more focus on the studios and the development team members, a number of them usually being in attendance.

Figure 9: Game Designer Chris Roberts at CitizenCon 2016 in Los Angeles

Besides these 'official' CIG events, backers are regularly organizing various events of their own to which they invite CIG team members. Most common are the Bar Citizen events which have been organized by backers in more than 20 countries all over the world. Community members have created their own websites[24] to help backers organize hundreds of these events.

22 See below "Player Organizations" regarding the STAR CITIZEN Organizations.

23 The campaign was launched on October 10, 2012 at 10AM; 10-10-10, of course, being the binary for 42, meant to give Deep Thought....

24 See, e.g, http://barcit.zen.sc; http://www.britizencon.uk; http://citizencon.de

ADDITIONAL INTERACTIVE FUNCTIONALITIES ON RSI PLATFORM

Player Organizations

Already in 2014, the RSI platform introduced the *Organizations Module* which enables players to create and/or join a player organization of their choosing. Backers quickly made use of this feature and by now almost 50,000 organizations have been formed, with the top ten counting between 2,000 and 14,000 members. The recently introduced Spectrum network on CIG's platform allows members of each organization to create their own chat rooms and forum communications which are private to them. Over 20,000 organizations have set up their private forums and chat rooms in the first six months since the introduction of Spectrum.

Gifting, Trade-ins

Another important element for community engagement has proven to be what can be called a 'continued trading experience.' Spaceships are initially offered at a heavily discounted pledge amount in concept form, before they evolve into their in-game flyable state. So far, 92 different spaceships and variants thereof have been introduced, and as of today 48 of them are fully flyable. In addition, "virtual in-game merchandise" in the form of smaller accessories, such as weapons or character clothing, are available in-game. Items (or the needed equivalent UEE game credits) have to be initially acquired with real-world pledge money, since these sales are used to help fund development, but it is then possible for players to 'melt' these assets back into credits, which can be aggregated to acquire another item.

This feature was initially offered in view of the early state in which backers make the pledge decision—if the final item doesn't meet their expectations or, more likely, other, more appealing ships or items are released subsequently, then they should be able to revisit their decision. However, this constant ability to trade has proven extremely popular—indeed it has been 'gamified' beyond this originally contemplated purpose—and provided an additional opportunity for players to engage with the game while it is in development. Trading activity in the backer accounts equals approximately double the initial pledge amounts and has reached a volume of several hundred million dollars since the feature's implementation.

The "trade-in" feature on the RSI platform was developed in anticipation of a more full-fledged in-game trading system. In accordance with the final goal of deeply immersive gameplay, the entire trading system will be moved in the foreseeable future from the website into the game itself; moving it "in-'verse." Once the move is complete, the player will go to a ship dealer or in-game ship market in order to trade-in his/her ship or to trade it with other players. For now, however, the system remains on the website where it is accessed by tens of thousands of community members on a regular basis.

Community-Created Content

Allowing the community to create and showcase their own fan designs, fiction, or other material related to the game is another important feature of community engagement. CIG's community hub, which hosts content created by the community for the community, holds over six thousand spotlights where members have posted their own designs and stories. Players have also already hosted over eleven thousand livestreams showing off their various playthroughs of already-released portions of the game.

OPEN DEVELOPMENT—THE COMMUNITY AS PUBLISHER

As explained above,[25] crowdfunding and open development often go hand-in-hand, and the necessarily flexible scope of a crowdfunded project creates particular issues to be dealt with in front of and with the community. It is inherent to a crowdfunded game venture that the scope of development may be adjusted (upwards or downwards) depending on the success of the campaign, and delivery dates are obviously dependent on the scope of the project and the resources available. In traditional game development, these issues of scope, cost, and release dates can be the subject of contentious discussions between the development team and the publisher. In the case of STAR CITIZEN, these issues were debated with and amongst the backer community.

Chris Roberts always envisioned a vast first-person universe for STAR CITIZEN as the ultimate goal, but when we embarked on the initial campaign, it was structured based on the reasonable assumption that we would have to achieve that goal in successive, incremental steps via a customary sequel and expansion

25 See above "Crowdfunding and Open Development."

model. When the community responded as positively as it did, we offered "stretch goals"[26] for certain additional funding levels, only to find that these were exceeded almost faster than we could post them. As the community support continued and even intensified over time, it became increasingly obvious that a logical and efficient development approach required us instead to build certain systems and features necessary for a large-scale project as part of the initial release of the project rather than appending them at a later date.

The ultimate stretch goals offered to and embraced by the community over the first two years of the ever-growing campaign required groundbreaking technology to be developed for STAR CITIZEN. This included such tasks as: refactoring the game engine to 64-bit so that the vast worlds could be produced in a fully explorable fashion; streaming tech and dynamic instancing to deliver expansive environments and allow for solar system-sized play; localized physics grids and various other code features, all of which are required to allow for immersive, seamless play in an ultimately massive multiplayer environment without ever seeing a loading screen, all in pursuit of the exceptional fidelity and technical ambition that have been a cornerstone of Chris Roberts' vision for STAR CITIZEN.

It is obvious that the necessary R&D for these technologies and systems at the initial stage (rather than in a few years after release) not only called into question the estimated delivery dates for interim modules and game builds to be released in pre-alpha mode, it also made the originally-projected game delivery dates of late 2015/early 2016 obsolete.

In addition, SQUADRON 42 had evolved from a small SQUADRON 42-type module within the STAR CITIZEN first-person universe, to a stand-alone AAA game in its own right, complete with extensive performance capture of a star cast, face rigs with unmatched fidelity, and so forth. The expanded scope of SQUADRON 42 is another example of the opportunities that an open campaign with community feedback provides. The original concept called for SQUADRON 42-type missions set inside the STAR CITIZEN game that would allow new players to get their feet wet, learn how to fly, and earn some credits so that they would be properly prepared by the time they entered the multiplayer universe. Depending on how well a player completed this narrative-driven introductory element, they would be released into the STAR CITIZEN universe as a civilian with commensurate skills and resources in the form of in-game connections and reputation, credits, and whatever ship(s) they pledged for, etc. However, with the mas-

26 See https://robertsspaceindustries.com/funding-goals.

sive growth and community encouragement to expand the project from its relatively humble beginnings, we decided to spin off the introductory module into a much more significant and larger standalone single-player game.

Figure 10: SQUADRON 42: Actress Gillian Anderson, being performance-captured as Captain Rachel MacLaren

This new scope for STAR CITIZEN and SQUADRON 42 called for a vastly larger development team and studio facilities than ever contemplated during CIG's humbler beginnings in 2012. At the conclusion of the initial crowdfunding campaign, CIG consisted of only a handful of collaborators without any physical studio facilities. As a consequence, a significantly longer and more complex ramp-up was required to assemble a team that could competently wrestle this task. Building rapidly a large developer team is no small task, and it is best accomplished by accessing talent pools in various global locations. CIG decided in 2013 to expand its operations into Europe and, after experienced UK-based producer Erin Roberts[27] joined the effort in 2013, CIG established successively three additional European studios and offices. Ultimately five locations in three countries were needed to capture the best talent for this purpose. It took between 12-15 months in the US, and another 12-18 months in Europe to establish and

27 Erin Roberts is the brother of Chris Roberts; for his extensive career history see: http://www.mobygames.com/developer/sheet/view/developerId,23689/, accessed July 30, 2017.

organize this infrastructure into an efficiently functioning development team of now more than 450 people. The community witnessed the buildup of CIG's studios and its development team as part of the open development transparency.

Despite the enthusiasm and support amongst the community, even the most ardent and experienced gamers typically have not had the opportunity to gain an understanding of the complexities and inherent unpredictability prevalent in game development. In the traditional development process the gaming public will only learn about a project when it nears completion, i.e., when normally all unforeseeable issues that are likely to cause delays have been overcome[28] (not even mentioning the countless projects which were abandoned before ever being announced). Larger and more complex games, in particular MMOs, customarily have development cycles of four to six years, sometimes longer. And these time frames hinge upon a more or less complete development team with established studio facilities in place when the project development starts. However, these facts remain often invisible to the gaming public.

Figure 11: CIG Studio teams in Los Angeles, Austin, Manchester, and Frankfurt

28 See also above "Crowdfunding and Open Development." Even in these late phases of polishing, unforeseen issues may still arise and gamers will see release dates being pushed further into the future.

Given these elements at play and the sometimes-volatile reactions by parts of the community, we have had to debate more than once how far to go in terms of transparency. After we had missed a few interim dates and were facing somewhat of an uproar by a small, but vocal part of the community, we considered at some point not announcing delivery dates for interim module expansions anymore. However, ultimately, we came to realize that the more in-depth information we provided to the community, which was more than interested and willing to absorb it, the more STAR CITIZEN backers developed an understanding and tolerance for the process and its inherent difficulties. Equipped with the requisite detailed information, the community engaged more and more in an informed debate about the rationale for the decisions made by CIG. Ultimately, the overwhelming majority of the community supported CIG's decision to expand the game's scope.

Open Development is about building a community of backers and then developing alongside and in cooperation with it. The kind of community you build, therefore, plays an important role in the development of your game. In the case of STAR CITIZEN, a very engaged community of backers has proven to be an invaluable resource and support. Recently, CIG decided to take the transparency one step further and even post its detailed internal development schedules for specific features and massive game build updates. Staying with the open development concept without compromise has solidified the continued support and funding from both the backers and the gaming community at large. Tens of thousands continue to join the ranks of the STAR CITIZEN community every month. In effect, more in-depth communication and increased transparency has intensified the partnership with the CIG community of 'publishers' as we advance together on the way to building the "BDSSE": the "Best Damn Space Sim Ever."

CONCLUSION

In summary, while CIG's open development approach for STAR CITIZEN and the level of engagement with the community has involved challenges and a steep learning curve, the experience and benefits have been overwhelmingly positive. STAR CITIZEN is the first of its kind: a major AAA game project openly developed with a backer community in a self-publishing environment. This enables us, under Chris Roberts' leadership, to implement a single creative vision, which is enhanced by the community's feedback and remains independent of forced release schedules or other corporate profit requirements.

The open development approach eliminates the 'black box' of game development and as such empowers the community and the development team. If a transparent development process is maintained consistently and with the necessary focus and effort, the ensuing community engagement lends itself to a continued funding campaign which allows the developer to remain independent from traditional publishers[29] while implementing their creative vision in a fruitful exchange with the community—to the benefit of both the developer and the community.

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29 See also regarding the future potential of this funding method when combined with other known approaches: Freyermuth, Ortwin: "How Indie Film Financing Could Shape the Future of Games," *Gamesindustry,* http://www.gamesindustry.biz/articles/2014-06-23-how-indie-film-financing-could-shape-the-future-of-games

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II.5 Games Preservation Summit

Introduction

MARTIN LORBER

Many cultural institutions today are concerned with collecting and preserving objects of relevance to human history. Whether these are technical, cultural, or political objects—the systematic preservation of artifacts is integral to our engagement with our past and our cultural identity as a society. Of course, the history of mankind is also a history of play. In the past, documentation of the culture of play might have been possible with physical toys and instruction booklets, but today many games are played exclusively in a digital space. The rise of video games from a technical curiosity in a niche market to one of the most popular products of art and culture of our time shows that digital games are an important testimony of our recent cultural history and a unique phenomenon that requires comprehensive and systematic preservation.

Games preservation today is practiced not only by cultural institutions like museums but also by parties in the educational sector and members of the video game industry itself. Each of these groups has a unique set of motivations, approaches, and goals when it comes to preservation efforts. While some approaches focus on preserving the code and the environment in which it was developed as accurately as possible, others attempt to capture parts of gaming culture in the form of physical objects and the stories revolving around them. While approaches might differ on a philosophical level, they must all adhere to a precise and reproducible perseveration methodology in order to be effective, useful, and accessible for generations to come. This again, among other things, raises technical as well as curational and legal challenges that need to be addressed. The field of video game preservation today may still be underrepresented in relation to the relevance the medium holds within contemporary culture, but those dedicated to preservation efforts are striving to achieve their goals through specialization and diversity in practice.

In this chapter, two representatives from the games preservation community present their approaches to games preservation. Stefan Serbicki, Technical Director of Preservation Services at Electronic Arts, offers insight into the great logistical and technical efforts that go into preservation during and after the development of a triple A video game title. James Newman, professor at the digital academy of Bath Spa University, discusses how the United Kingdom's National Video Game Arcade teaches the history and culture of video games through carefully curated and preserved relics.

Play, Things and Playthings

Approaches to Videogame Preservation

JAMES NEWMAN

GAME ON

Given their continued rise in economic, cultural and social influence, it is perhaps unsurprising to note that videogames have become firmly established as objects of study within the Academy.[1] However, as Rutter and Bryce observe,[2] while some scholars had attended to the form since videogames first arrived in arcades and living rooms, it was the early 2000s that witnessed a virtual explosion of research and publications dedicated to investigating games and gameplay. For Aarseth, this surge of activity both signalled and ushered in a change in the status videogames shifting them from "*media non grata* to a recognized field of great scholarly potential, a place for academic expansion and recognition".[3] Conferences, journals and increased research funding for what has become known as *game studies* all attest to the interest in serious scrutiny of the representations circulating in digital games, the growth and structures of the global industry, and the use and development of new technologies, for instance.

1 http://www.nesta.org.uk/library/documents/NextGenv32.pdf on 31.01.11.; http:/www.gamesindustry.biz/articles/2017-01-05-era-uk-digital-games-made-2-2bn-in-2016-and-offset-physical-decline, accessed on January 5, 2017.

2 Rutter, Jason/Bryce, Jo (eds): *Understanding Digital Games*, London: Sage 2006.

3 Aarseth, Espen: "Genre Trouble: Narrativism and the Art of Simulation," in: Noah Wardrip-Fruin/Pat Harrigan (eds), *First Person: New Media as Story Performance, and Game*, Cambridge, Mass.: MIT Press 2004, p. 45.

Alongside these topics and areas of discussion and debate, recent years have seen a growing popular and scholarly interest in game history that join the myriad popular histories of systems, genres, hardware and software.[4] The MIT Press' *Platform Studies* series have focused on specific historical, often obsolete, hardware systems such as the Montfort and Bogost's volume on the Atari 2600/VCS,[5] Altice's exploration of the Famicom/Nintendo Entertainment System,[6] and Gazzard's history of the BBC Model B home computer,[7] while the University of Michigan Press' *Landmark Video Games* series centres on specific games (e.g. Ruggill and McAllister's study of TEMPEST[8]).[9] In a similar vein, works such as Wade's *Playback: A Genealogy of 1980s British Videogames*[10] take an altogether broader view of the socio-political contexts of game development and reception albeit locating their analyses within delimited eras and geographical boundaries. The interest in game history may be partly understood in terms of the biographies of scholars keen to look back at influential periods in their own gaming past. Certainly, these personal connections drive many of the important grassroots and fan accounts to which we will return later and the intimacy of these relationships to the objects of study and autoethnography methods raise some important questions about access and investment as Hills[11] and others

4 DeMaria, Rusel/Wilson, Johnny: *High Score: The Illustrated History of Electronic Games*, Berkeley: McGraw Hill/Osborne 2002.; Forster, Winnie/Dyll, Rafael/McCarthy, David: *The Encyclopedia of Game Machines: Consoles, Handhelds and Home Computers 1972-2005*, Utting: Gameplan 2005.; Weiss, Brett: *Classic Home Video Games, 1985-1988: A Complete Reference Guide*, Jefferson: McFarland 2009.

5 Montfort, Nick/Bogost, Ian: *Racing the Beam: The Atari Video Computer System*, Cambridge, Mass.: MIT Press 2009.

6 Altice, Nathan: *I Am Error: The Nintendo Family Computer / Entertainment System Platform*, Cambridge, Mass.: The MIT Press 2015.

7 Gazzard, Alison: *Now the Chips are Down: The BBC Micro*, Cambridge, Mass.: The MIT Press 2016.

8 TEMPEST (Atari 1981, ●: Atari)

9 Ruggill, Judd/McAllister, Kenneth: *Tempest: Geometries of Play*, Ann Arbor, MI: University of Michigan Press 2015.

10 Wade, Alex: *Playback: A Genealogy of 1980s British Videogames*, London: Bloomsbury Academic 2016.

11 Hills, Matt: *Fan Cultures*, London and New York: Routledge 2002.

have noted.[12] More speculatively, we might argue that this increased interest in looking back is attributable to a wistful, even nostalgic, yearning for an age of 'things' now increasingly superseded in this comparatively immaterial world of streaming, downloadable content and digital distribution.

Of course, accompanying this increased fascination with and interest in gameplay's past is a sobering, if not a little ironic, revelation. As our interest in game history grows, our ability to play old games, to appreciate the complexities and performances of gameplay and design, or to encounter the cultures and practices that surround and support gaming, diminishes at an alarming rate. And so, despite their apparent prevalence and penetration of popular culture and research centres, the simple fact is that videogames are disappearing.

GAME OVER?

As I have noted in Best *Before: videogames, supersession and obsolescence* by *disappearing*,[13] I mean to draw attention to a number of related technological, material and discursive issues. Most obviously, the physical deterioration of storage media leads to the loss of data (sometimes known as *bit rot* or *data decay*). As optical discs such as CDs, DVDs and Blu-Rays become unreadable, as magnetic media such as hard and floppy disks and cassettes lose their integrity, and as the chips in cartridges burn out, data must either be migrated to other formats or be lost forever. But there is more to videogames' disappearance than material degradation. Successive videogame console designs offer varying degrees of backwards compatibility meaning that catalogues of *previous generation* games are left unplayable on current and next generation systems. With the gaming industry based around these principles of "perpetual upgrade" as Kline et al[14] note, this process of continual renewal looks unlikely to abate.

Of course, recently, some publishers and platform holders have begun to commercialise their back catalogues more concertedly with re-releases 'retro' titles appearing on Virtual Consoles and e-Shops. However, these collections

12 Karen Hellekson/Kristina Busse (eds): *Fan Fiction and Fan Communities in the Age of the Internet*, Jefferson: McFarland and Company 2006.

13 Newman, James: *Best Before: Videogames, Supersession and Obsolescence*, London: Routledge 2012.

14 Kline, Stephen/Dyer-Witheford, Nick/De Peuter, Greig: *Digital Play*, London: McGill-Queen's University Press 2003.

typically represent only a subset of the total number of games available for a system and mostly comprise lists of already agreed commercially and/or critically successful titles hardly representative of the true gamut of games released. As such, while these collections and re-releases could be seen to provide continued access to old games and to promote their ongoing ludic (and cultural) value, there is a distinct selectivity in the remembering and forgetting that tends to privilege the already agreed critically or commercially successful.

More pointedly, the switching off of servers required for online play (see McDonough et al[15] on virtual worlds such as THE SIMS ONLINE[16] that *died* during the Preserving Virtual World project), or the removal of *unpopular* or *buggy* user-created levels from SUPER MARIO MAKER,[17] reminds us of the contingency of our ability to play on the commercial or aesthetic decisions of publishers, platform holders and IP owners.

If we add to this the ways in which retail, advertising and marketing practices also contribute to the fixing of players' attentions and desires on the forthcoming release, the pre-order, the always revolutionary next-generation rather than the current (let alone the past), we see a picture emerge of a games industry systematically eroding its own history. And who can blame them? The business model of the videogames industry is based on forward movement, new releases, consumer anticipation and excitement and the next purchase. Is it reasonable or realistic to expect servers to be provided and maintained to support long-term access to games whose user bases have fallen below commercially-viable levels?

For all this, or perhaps because of it and the work of scholars and industry groups, videogame preservation has climbed the research agenda in recent years. Papers such as the IGDA Game Preservation Special Interest Group's *Before it's too late*[18] and projects such as *Keeping Emulation Environments Portable*[19] *and Preserving Virtual Worlds* have helped raise awareness of the susceptibility of videogames to hardware and software obsolescence and media decay. Despite these calls to action, curation practice remains relatively uncoordinated with no

15 http://hdl.handle.net/2142/17097 on August, 31 2010.

16 The Sims Online (Electronic Arts 2002, PC: Maxis)

17 https://doi.org/10.1177/1354856516677540 on November 15, 2016; SUPER MARIO MAKER (Nintendo 2015, Wii U: Nintendo)

18 http://www.journalofplay.org/sites/www.journalofplay.org/files/pdf-articles/2-2-special-feature-digital-game-preservation-white-paper.pdf in Fall, 2009.

19 http://www.digra.org/digital-library/publications/emulation-as-a-strategy-for-the-preservation-of-games-the-keep-project/ in September, 2009.

clear leadership at national or international level. As such, much videogame software and hardware is already unplayable and development processes are unrecorded. The consequences of this are manifold and extremely significant. From a scholarly perspective, the project of game history, indeed game studies as a discipline, is substantially undermined as their very objects of study become harder or even impossible to access. Moreover, the disappearance of games alongside an absence of records of their design and the performances and cultures of play, denies future generations access to their cultural heritage and robs the next generation of developers of historical reference material.

As UK game developer and academic Dan Pinchbeck notes, "games history and preservation are of great importance to contemporary developers ... [yet] almost three decades of cultural material has become endangered owing to lack of formal preservation structures."[20]

Heritage organisations are paralysed by the uncertain legal and technological challenges of acquiring and holding videogames while the games industry has no standardised practices for institutional archiving and is founded on business practices designed to make old games obsolete and inaccessible. Indeed, as the IGDA White Paper warns, without action we will continue to lose access to videogames—permanently—thereby losing access to our cultural heritage and denying future game developers access to key learning resources.[21]

PLAYING GAMES

At this point, it is clear that action must be taken and the consequence of doing nothing is that more games will become inaccessible. What is less clear is what form that action should take.

As I noted in *Best Before*,[22] the objective of much extant videogame preservation work is to maintain the playability of games (or to make unplayable games playable once more). That is, the outcome of game preservation is to al-

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20 Pinchbeck, Dan: "Standing on the shoulders of heavily armed giants—why history matters for game development," in Janet Delve/David Anderson (eds), *Preserving Complex Digital Objects*, London: Facet Publishing 2014.

21 http://www.journalofplay.org/sites/www.journalofplay.org/files/pdf-articles/2-2-special-feature-digital-game-preservation-white-paper.pdf in Fall, 2009.

22 Newman, James: *Best Before: Videogames, Supersession and Obsolescence*, London: Routledge 2012.

low players in the future to be able to experience at first hand games that have become unplayable for any or all of the reasons we noted above. Prima facie, this is not an unreasonable to position from which to proceed. Surely, if we know anything about videogames, it is that one of their distinctive features (if not the distinctive feature) is that they are playable. Whether we refer to their *interactivity*, their *ergodicity* as Aarseth[23] would have it, whether this is expressed through the *configurative* act of play that Moulthrop[24] describes or what Banks[25] has called their co-created nature, if videogames a texts they are ones whose textuality is found in the interplay between design, source code, and performance. Given the apparent centrality of play and the oft-heard mantra that videogames must be played to be understood, centring our attentions on (re)creating conditions in which games may continue to be encountered in as close to their original state as possible appears to make perfect sense.

Typically, such preservation activity is conceived of as a software project and is achieved through emulation, where software running on one platform—a modern PC, for example—reproduces the environment required to run software from another. By way of example, software such as Open Emu transforms a modern Macintosh computer into a plethora of different 1980s-era 8-bit systems such as the Nintendo NES, or even more recent platforms such as the Nintendo 64 and PlayStation. The power of modern computing platforms and sophistication of emulation software means that many early games can even be played in a web browser: the Internet Archive's Internet Arcade holds over 900 games that are playable online. Of course, not all emulators are created equal and as byuu the creator of a popular NES emulator has noted, creating truly accurate emulation of even apparently lowly-powered systems requires a huge amount of computing power.[26]

Notwithstanding the approximations or inconsistencies found in many emulator routines that eschew authenticity for performance by not rendering every

23 Aarseth, Espen: "Genre Trouble: Narrativism and the Art of Simulation," in: Wardrip-Fruin, Noah/Harrigan, Pat (eds), *First Person: New Media as Story Performance*, and Game, Cambridge, Mass.: The MIT Press 2004, p. 45.

24 Moulthrop, Stuart: "From Work to Play: Molecular Culture in the Time of Deadly Games," in: Noah Wardrip-Fruin/ Pat Harrigan (eds), *First Person: New Media as Story Performance*, and Game, Cambridge, Mass.: The MIT Press 2004, pp. 56-70.

25 Banks, John: *Co-creating Videogames*, London: Bloomsbury Academic 2013.

26 http://arstechnica.com/gaming/news/2011/08/accuracy-takes-power-one-mans-3ghz-quest-to-build-a-perfect-snes-emulator.ars?comments=1#comments-bar on 09.08.2011.

frame, for instance, the technical achievement here is quite remarkable. This is particularly the case if we consider that much of this work is undertaken by amateurs operating without documentation. Given the increasing use of proprietary hardware designs and software routines along with deliberate obfuscation and copy protection of both, it is very often the case that documentation simply cannot be consulted. Although, not all emulators are created as grassroots projects and publishers seeking to re-release those select titles from their back catalogues very often make use of emulation rather than requiring the games to be recoded for a new platform.

For such commercial purposes where the publisher/developer owns the rights to games to be emulated and any proprietary software required to enable the emulator to function, or as a project for the legion of enthusiastic reverse engineers and amateur programmers to research and hone their craft, emulation is self-evidently valuable. However, in a game preservation context, emulation is an altogether more problematic proposition. First of all, why would we not treat emulators as software applications susceptible to precisely the same incompatibilities and reliant on the same dependencies of hardware and operating system as any other. In this way, they are both a potential to the problem of game preservation and the likely subject of game preservation activity as we seek to keep them updated or running on new platforms and systems. Moreover, although the unofficial coding of videogame system emulators is generally considered permissible as an act of research, the acquisition of copyrighted code remains unequivocally illegal. And as many of the games that we might want to play on these emulation platforms remain under copyright long after their commercial lifespan, there are as Rosenthal[27] has noted, often seemingly insurmountable legal impediments. Such situations require the navigation of complex permissions and intellectual property rights and, given that in many territories there are no special provisions in place to allow the circumvention of copy protection measures, preservation projects are faced with either inaction or to act outside the law (in the hope that lobbying might change the situation in the future). As Andreas Lange of the Computerspielemuseum notes:

"The problem is that the legal situation in Europe does not allow us to save our collection from decay. That's because of copyright laws that have been added to games a long time ago to prevent pirate copies. After all, emulation is a copy process: we need to transfer code from the original data carrier to another. Copyright laws are in place to prevent ex-

27 https://archive.org/details/Rosenthal-Emulation-2015 in November 2015.

actly that,' Andreas explains. 'So, we essentially have to stand there watching day after day as our collection, one of the most significant collections [of video game culture] worldwide, demagnetizes."[28]

Lobbying on the part of organizations such as EFGAMP (the European Federation of Game Archives Museum and Preservation projects) seeks to redress the situation. Their recent statement reiterates the point and underscores the difficulty that heritage organisations and other institutions of memory concerned with holding collections of videogames find themselves facing.

However, most European countries have legal restrictions on the creation of digital disk copies. Even heritage institutions are permitted to produce a copy only if there is no copy protection. Unfortunately, however, the majority of media with video games are endowed with copy protection methods, originally placed there to prevent software piracy. Hence a legal copy—even for memory institutions—is usually disallowed.[29]

Taking a more contrary, but nonetheless critical, view we might also point to the fact that, despite representing extraordinary technical achievements, many emulators do not reproduce gameplay experiences with unerring authenticity. Certainly, the survey of emulation platforms presented in the Preserving Virtual Worlds report notes some significant variations in performance between emulators in comparison with reference systems.[30] Depending on the specific use-case, small variations or inconsistencies in sound reproduction might be insignificant and an overall flavour of the audio output might be entirely sufficient. However, for scholars of ludomusicology, such variations might be of immeasurable consequence.

Interfaces, too, present opportunities for considerable variation in emulated experience. Many systems feature dedicated and distinctive joysticks whose feel is integral in shaping the gameplay experience. The particular feel of the two round-topped buttons on a NES pad is not only a characteristic feature contributing to the feel of playing Super Mario Bros., for instance, but allows—even encourages—a distinctive rolling motion of the thumb between the run and jump controls. Square-topped buttons with hard edges simply would not feel the same

28 http://thenextweb.com/insider/2012/04/22/saving-the-game-why-preserving-video-games-is-illegal/ on 22.04.2012.

29 http://www.efgamp.eu/wp-content/uploads/2015/07/Statement_EFGAMP_Game_Preservation_2015.pdf on 22.04.2015.

30 http://hdl.handle.net/2142/17097 on 31.08.2010.

and would not allow the same smooth motion of the right thumb across, between and over what effectively become a single rocker switch.

For Foteini Aravani, Digital Curator at the Museum of London, this is one reason why it is as important to collect and preserve the physical material of videogames as it is to preserve the software code.[31] If we feel there is something particular in the experience of pressing the ZX Spectrum's strangely unresponsive spongey, rubbery keys rather than just pressing any keys, the ZX Spectrum keyboard is the most effective way to recreate this. At the very least, alongside Ian Bogost's call for a CRT emulator that recreates the imperfections of scanlines, afterimages and motion blur that so characterise that period of gaming, we should perhaps add a rubbery keyboard emulation to our wish-list alongside frame-perfect rendering of graphics and sound.

NOT PLAYING GAMES

There are, however, other reasons we might want to shift our attentions to consider more than just the preservation and emulation of code. In the first instance, we might argue that the central premise of game preservation requires rethinking. By this, I mean to draw attention to the limits of playing as a means of unlocking the meanings of games. I have suggested elsewhere, that an approach to game preservation in which we do not seek to prolong the playable life of games but instead, let them die.[32] This is not a position born of resignation or frustration, though it does accept the commercial incompatibility—or at least difficulty of preservation in a business context. Nor is it a position that undervalues the importance of play. In fact, quite the opposite. By suggesting that playability might be a finite state, I mean to suggest that games move through a number of different phases in their lives (and *afterlives* as Guins[33] puts it). Importantly, by acknowledging playability as a specific moment in a game's life cycle, I argue that we put ourselves in an empowered and positive position. We potentially remove the compulsion to (re)create the often tortuously complex conditions of playability in perpetuity. By making this small but impactful shift in our think-

31 http://www.museumoflondon.org. k/discover/plays-thing-keeping-old-ga es-alive

32 New an, Ja es: Best Before: *Videogames, Supersession and Obsolescence,* London: Routledge 2012.

33 Guins, Raiford: *Game After: A Cultural Study of Video Game Afterlife,* Ca bridge, Mass.: MIT Press 2014.

ing, we allow ourselves to reconfigure the objectives of game preservation. We shift from a position in which play is the outcome of preservation to one in which play is part of the object of preservation. We shift from what I call game preservation to gameplay preservation.

As the ICHEG capture project website notes, where online servers are deactivated video recording of gameplay might be the only means of documentation. However, the version of gameplay preservation I outline and which the Game Inspectors build upon is founded on slightly different precepts. I argue that by deprivileging playability as an endgame, gameplay preservation is an approach that proceeds from a position (more) sensitive to the complexities and malleability of games at play. Moreover, it offers great scope for capturing a diversity of insights as well as potentially involving a broader constituency of collaborators in the creation of the historical record through the generation of archival and interpretative materials.

As such, I argue that allowing videogames to *die*—in the sense that we willingly surrender the ability to play them and shift away from the task of attempting to prolong this phase of their life—proceeds not from a position that suggests that play is not important. Rather, letting videogames die and accepting that playability is a finite phase proceeds from a position that contests that play is too important to only constitute the outcome of preservation activity. So important is play in configuring, co-creating and giving shape, form and meaning to 'the game' that I argue that the objective of preservation practitioners might well focus on capturing the many ways in which it is performed and the different games that emerge from these playings. What is particularly interesting about such a *documentary* approach to preservation is it is inherently multidisciplinary drawing on the skills, methodology and analytical experience of historians, documentarists, ethnographers and software engineers among others.

BITS OF DATA AND PIECES OF PAPER

However, while the vagaries of emulation performance and the shift towards incorporating documentary approaches to gameplay preservation might make the case for broadening the scope of collecting beyond code alone, there are other compelling reasons for collecting videogame objects. Considering them both recognises and reminds us of the materiality of videogaming. We have noted this in relation to the feel of specific hardware interfaces, audio and visual displays, but this materiality cuts deeper still and it informs the work I and colleagues at the National Videogame Arcade have put into place in our exhibition work.

As a member of the research and curatorial team at the National Videogame Arcade in Nottingham, UK, I have worked on a number of galleries and exhibits some of which experiment with new forms of digital presentation and interpretation. However, while these innovative interactives enthuse visitors and offer new insights into game design and play, equally popular is an altogether more traditional exhibit. It appears *traditional* because unlike the other galleries which are filled with computing equipment, touchscreen and bespoke interfaces, it is an exhibit comprising a collection of objects and ephemera sitting behind glass in museum cases. However, despite its conventional layout, the 'History of Videogames in 100 Objects' gallery is far from traditional in its design and intention and draws attention to stories and narratives in gaming through a variety of unusual, unique and everyday objects. Crucially, the 100 Objects gallery tells stories about the early days of videogame culture and provides context that cannot be accessed through the act of playing alone.

Here, I will focus on two objects which, though markedly different in appearance and created by the hands of markedly different players in game culture and industry, are nonetheless linked in fascinating ways.

The first object from the collection is a hand-drawn cassette inlay created for the 1985 Commodore 64 game WAY OF THE EXPLODING FIST (see Figure 1).

As is probably evident from the drawing style, use of coloured pens, handwritten description of the controls, and esoteric approach to spelling, this is not the original cover as produced by publisher Melbourne House—even though it bears their name. Rather, this is a homemade, handmade, facsimile. A copy of the original artwork to accompany a copied version of the game. The backstory to this object will be a familiar one to players of a certain age who, even if they did not engage in the practice themselves, will no doubt be aware of the incidence of cassette duplication. As the game's data was encoded as audio on cassette tape, making a copy was as straightforward (and as illegal) as copying a Top 40 album. *Home Taping* wasn't only *Killing Music* but threatened to do so for games as well. Like many players at the time, the (anonymous) donor of this piece had duplicated a friends' copy of the game using nothing more than a domestic hi-fi.

And so, lest we consider media piracy to be the preserve of the current generation of torrent and filesharing network users, this apparently innocuous piece of amateur artwork ably demonstrates that the practice stretches back to almost the very earliest days of gaming itself. And it reminds us of the constant battle between technologies of distribution and of duplication. While there may be few players who grew up with the Commodore 64, ZX Spectrum and the like who will shed a tear at the loss of the 15-minute wait for a game to load from cas-

sette, it behooves us to remember the cultures and practices of copying, tape sharing and bootlegging that are fundamental to the early days of videogaming—and to computing in general.

Figure 1: Pirate Cassette Inlay

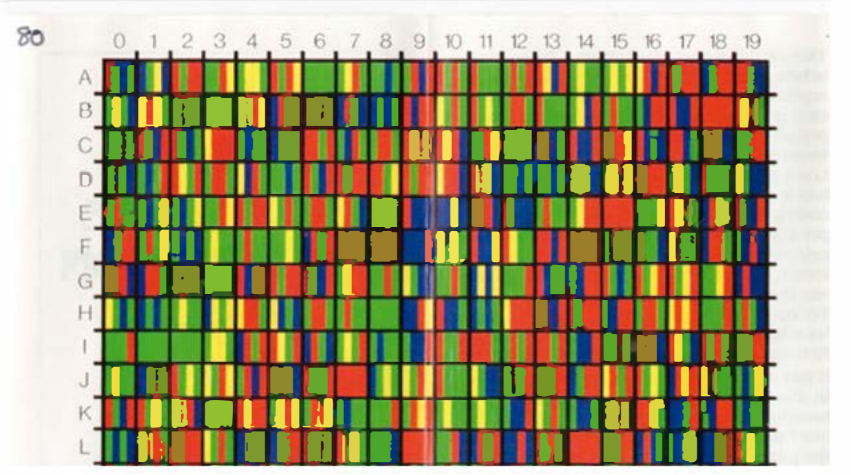
Source: National Videogame Arcade

The games industry publicly responded in a variety of ways to the pervasiveness of this culture of bootlegging culture. Public information and promotional campaigns such as *Don't Copy That Floppy* in the US took a similar line to the UK music industry's position that *Home Taping Is Killing Music*. To this day, trade organisations such as UKIE (United Kingdom Interactive Entertainment association) operate hotlines for concerned consumers to report suspected acts of bootlegging or the sale of illicitly-duplicated games.

Alongside hotlines and public information campaigns, developers and publishers took other more direct action to stem the tide of unauthorised copying.

Our second object is the product of just such an endeavour. Distributed with the 1984 game JET SET WILLY,[34] created by British developer Matthew Smith and looking like a cross between a television test card and an Ishihara test used for detecting colour blindness, this multi-coloured grid was designed as an attempt to confound the efforts of pirates (see Figure 2). This is an early example of a copy protection scheme.

Figure 2: Software Projects Copy Protection Card (Detail)



Source: Software Projects/National Videogame Arcade

The Software Projects copy protection card to give its full name, does nothing to make the act of duplicating the cassette on which JET SET WILLY was distributed any harder. This remains a trivial matter for anybody with a dual tape deck, the necessary inclination and enough spare blank tape. However, upon running the copied game, the would-be player is presented with a challenge. A challenge that can only be responded to and solved with reference to the protection card. Before the actual game can be elected, the player is required to enter one of the 180 *codes* found on the card. Each code is contained within a square, referenced by xy co-ordinates and comprises a string of four colours. Entering the right string of colours unlocks the game. Failure to do so leaves the game unplayable. With-

34 JET SET WILLY (Software Projects 1984, ●: Software Projects)

out the key, the copied game, while identical to all intents and purposes to the original, is essentially useless. No code, no game.

In an age of camera phones and colour photocopying, it is hard to imagine such a system being effective. However, the system worked partly precisely because, while copying audio was easy and within the reach of many players using domestic hifi equipment, duplicating a full colour printed copy protection card was far harder to do at home. A dedicated duplicator might well copy out the protection card by hand, but that is a lot of effort and ink, though if we find a handmade card, we will certainly put it in the exhibition immediately!

PLAYTHINGS AND PLAYFUL THINGS

These two objects, both made of paper and covered in colourful patterns, have much in common. One is naive figurative work, the other is an apparent homage to the non-representational geometric abstraction of Mondrian. One is produced by hand, the other mechanically reproduced. Both, however, reveal something of the ongoing war between rights holders, publishers, pirates and players, albeit from very different sides of the battlefront. Both objects speak of the overlapping relationship and interaction between the technologies of distribution and the technologies of duplication and the ingeniousness of countermeasures and resistance.

Ultimately, migrating, archiving and cataloguing game code is an essential part of the task of game preservation. For all the protestations above as to the benefits of broadening our focus and incorporating a wider variety of materials, there can be no doubt that access to code allows us to appreciate the game's design and aesthetic and makes possible certain kinds of analyses and studies. Interrogating the way the game was written, investigating the non-executable comments, and revealing the extent of code sharing and collaboration, are all valuable and vital areas that are predicated on the availability of that resource. However, it remains the case that code alone whether executable or otherwise, does not readily provide insight into the cultural, political and economic context in which it appeared. Nor does it reveal the meanings that the game might have taken on or the ways in which it was played, modified or reworked as players exploited bugs and inconsistencies and created their own emergent metagames. If part of our objective is to shine light on the videogame cultures and practices of the 1980s, materials like these hand-drawn covers and fiendish copyprotection, alongside luxurious manuals and fan produced strategy guides, are crucial to preserve. They are not simply the contextual materials that help make sense of

the playable game. These are not parataxis but rather are the stuff of gaming and gameplay and are every bit as central to the collecting, and curatorial practice of game preservation practitioners as code, cartridges, and joypads.

Of course, the great irony of the Software Projects copy protection card that now sits behind glass in the National Videogame Arcade's History of Videogames in 100 Object collection, is that it helps tell a story whose ultimate conclusion is the development of complex, digital rights management systems and technical measures of protection that are precisely the systems that undermine the activities of preservation projects, memory institutions, libraries and galleries as Andreas Lange notes above.

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LUDOGRAPHY

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Preserving Games from Concept to Creation

A Perspective from the Business Side

STEFAN SERBICKI

INTRODUCTION

Video game companies, in general, do not preserve the games they make for cultural or historical reasons. They are for profit institutions, and any endeavor they engage in needs to be justified from a return of investment (ROI) point of view. As it happens there are very good reasons to archive for business purposes. Old games are often ported to new platforms,[1] can be offered for free as an incentive to purchase newer games, or used to attract consumers to company websites.[2] In-game assets can be reused in other games or serve as reference for the creation of new intellectual property (IP). While it is true that video games have not seen remastered releases on new technology at the scale that cinema and the music industry have, one should consider that video games are a younger entertainment medium. As the industry continues to mature it is likely that we will see

1 Wawro, Alex: "What exactly goes into porting a video game?, in: *Gamasutra*, August 14th, 2014, http://www.gamasutra.com/view/news/222363/What_exactly_goes_into_porting_a_video_game_BlitWorks_explains.php

2 Bryant, Paul: "New games are joining the EA Access, Origin Access vault soon," in: *Gaming Age*, October 7th, 2016, http://www.gaming-age.com/2016/10/new-games-joining-ea-access-origin-access-vault-soon/

greater demand for remastering. In fact, there are already a considerable number of Gen 3 titles being remastered for Gen 4 consoles.[3]

To accomplish the above goals, it is necessary to preserve not only a playable build of the game but the entire development environment. This process can be complex and require a fair amount of work on the development team's side. Unfortunately, because the benefits of preservation may not be realized until years into the future and in ways that are unimaginable in the present, archival work is often postponed indefinitely. By the time game assets are desired for the reasons mentioned above key assets may have been lost, reducing the possibility of remastering or porting a given game. In fact, it is likely many old titles are not resurrected due to loss of development IP. Even when the demand is there, it is too costly to redevelop a game from scratch to make it worthwhile to the business. Below is an excerpt from a Wikipedia article that exemplifies the problem:

"Speaking in 2015 regarding a possible re-release of BLADE RUNNER [the 1997 videogame] via Steam or GOG.com, Louis Castle explained the source code and assets were lost when Westwood moved its studio from Las Vegas to Los Angeles, thus making a re-release or a HD-remaster impossible. Even if the code was found, to restore almost a terabyte of assets, whether for new pre-rendered backdrops or full real-time 3D, would cost tens of millions of dollars, making a re-release as unlikely as a sequel."[4]

WHY SHOULD VIDEO GAME COMPANIES PRESERVE DEVELOPMENT ENVIRONMENTS?

Although we have already answered the question above, it may be helpful to formally list some of the reasons here:

- It will be necessary to make changes to the code to port, remaster, or to get the game to play on an emulator.

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3 Juba, Joe: "The Definitive (But Evolving) List of New-Gen Remasters," *GameInformer*, December 24th, 2016, http://www.gameinformer.com/b/features/archive/2016/05/16/definitive-evolving-list-new-gen-remaster-hd-remake-.aspx

4 Wikipedia: "Blade Runner (1997 Video Game)," *Wikipedia*, https://en.wikipedia.org/wiki/Blade_Runner_(1997_video_game). Last modified January 27, 2017; RagnarRox: "Blade Runner—Looking Back with Louis Castle (Westwood Studios)," *YouTube*, July 27, 2015, https://www.youtube.com/watch?v=D623rBiAVX0

- To rebuild a DRM free or unencrypted executable. Obviously, for preservation purposes having a playable build that does not require authentication of any kind is desirable. Also, certain types of services will wrap executables to get them to work on their platforms. Generally, the wrapper will only work if the executable is unencrypted.
- Gives an insight to the creative process and the inner workings of the game, which may be of use for academia or other institutions seeking to understand details on how a game was designed and created. This activity may not yield a monetary benefit, but it can result in positive and therefore valuable publicity for the company.

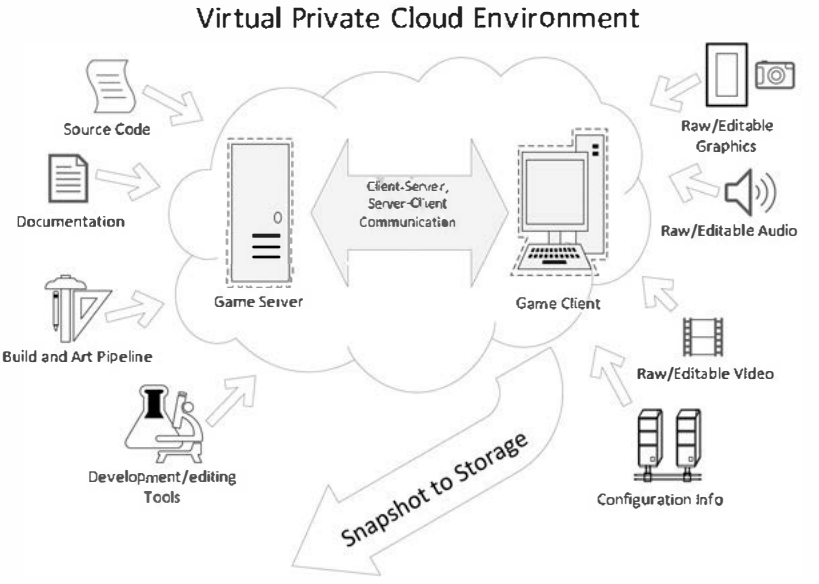
WHAT DO WE NEED TO PRESERVE?

Today we need to preserve development environments on both the client and server side. If we are only preserving a simple game-client-game-server environment, then it may be sufficient to set that up in a single Virtual Private Cloud (more on VPCs in the subsequent sections).[5] This is illustrated in figure 1 below. However, if we want to capture all the supporting services that make up the gameplay environment more than one VPC may be needed. This is illustrated in figure 2, where we have two separate VPCs: one for the client side, and another for the service side. This is just one possible configuration. The decided upon configuration may depend on the game service platform and the different support services to the core game service. For example, we could have a VPC containing the client development environment, another for the game server environment, and a third for the supporting services. Or there could be separate VPCs for each service.

Figure 1 shows all the items we need to preserve the core development environment. That is, an environment that would allow the rebuilding of a game client and game server and configure both so they can talk to each other. An additional server may be needed to get the game to play, depending on how the preproduction test environment was set up, but most ancillary servers would not form part of this environment. Some of the items listed, such as the art pipeline may only be relevant to either the client side or the server side.

5 Viswanathan, Balaji: "Virtual Private Clouds and how they compare vs Public," in: *Cloudtweak*, January 7th, 2012.

Figure 1

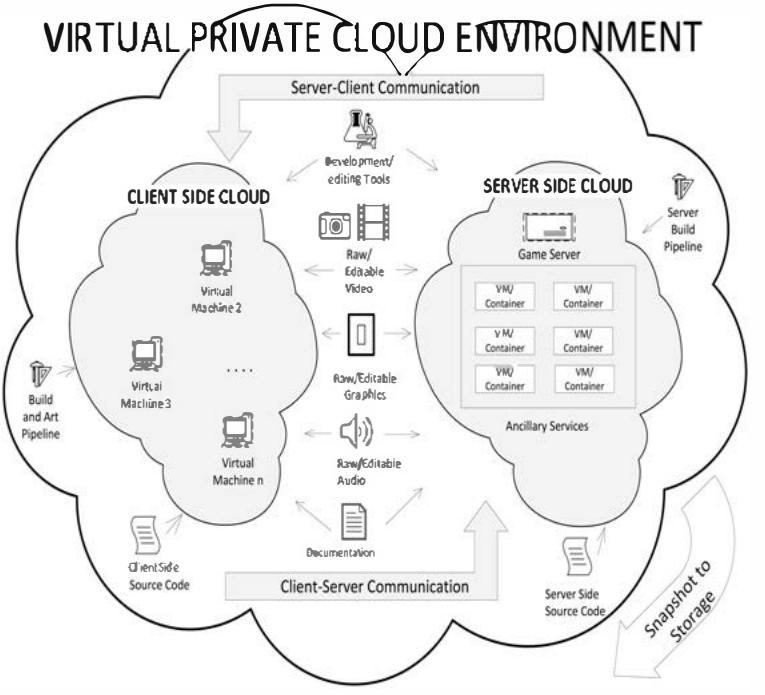


Source: Illustration by the Author

Figure 2 illustrates a more complex setup with two VPCs, one for the client side dev environment and the other for the server side. Preserving at this level provides a more complete archive but also requires the cooperation of support teams as well as the development team.

In the above configuration, the client and server VPCs are nested inside a larger VPC inside which servers and clients communicate. Technically the entirety of the virtualized environment, both client side and server side, might live in or form a single VPC, but it is helpful to think of each as separate since it may be different teams developing and managing each service and a different team developing the client. This means tools, environment configuration, architecture, resource requirements, etc., may differ for each development environment and it may make sense to encapsulate each environment separately. Communication between client and servers would be enabled to reproduce the gameplay environment.

Figure 2



Source: Illustration by the Author

Thus, we may consider two preservation approaches:

- Preserve a development environment such that dependencies on supporting services is removed. These services would include items such as login authentication, game reporting, analytics, matchmaking, etc.[6] The resulting de-

6 Drachen, Anders/Canossa, Alessandro/ Seif El-Nasr, Magy: "Intro to User Analytics," in: *Gamasutra*, May 5, 2013, http://www.gamasutra.com/view/feature/193241/intro_to_user_analytics.php?print=1; N.N. "Automated match making system in video games," *Course blog for Networks II. Cornell University*, March 25, 2013, https://blogs.cornell.edu/info4220/2013/03/25/automated-match-making-system-in-video-games/; Kunal, Kanish: "Eight leaderboard service providers for games and alternatives," in: *Super Dev Resources*, January 2, 2016, https://superdevresources.com/leaderboard-service-providers-games/

velopment environment would then be valid for building a release version of the game client and a client-compatible release version of the game server. Both client and server in this case do not require interaction with or depend in any way on ancillary services. The rebuilt client and server are then configured such that they can talk to each other. The state of the VPC is subsequently snapshotted to storage and thus preserved.

- When the snapshot is restored it should be possible to rebuild the client and server. Gameplay can be tested once the client and server are configured to talk to each other. This would probably be good enough for most business purposes, but it may fall short of what is desired for cultural preservation purposes. In other words, it would not be possible to recreate the full production environment in which the game originally lived and therefore the totality of the gameplay experience would not be reproduced.
- Preserve the entire environment: client, game server, and all other services the game interacted with during its lifetime. The problem here is that although technically feasible, it may be costly and time consuming to do this, making it hard to justify from an ROI point of view. Preservationists will need to present business cases where preserving all services is necessary and desirable. To date this has been a difficult argument to make.

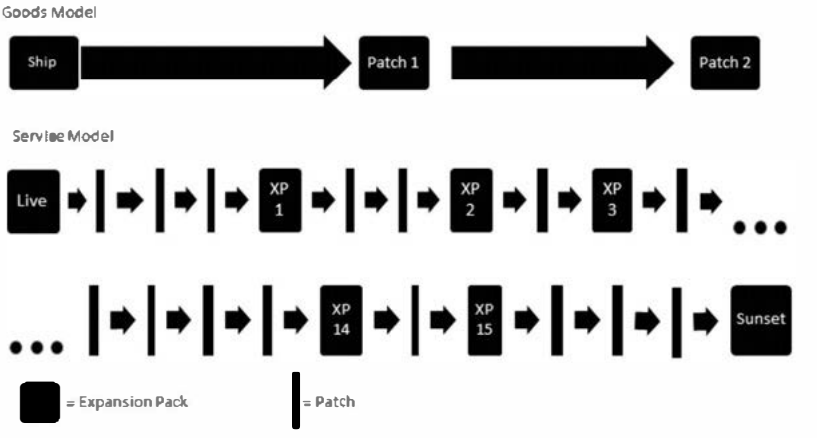
Most preservation efforts at Electronic Arts follow the first approach, or the set up illustrated in figure 1, although progress is being made in moving toward the scenario presented in figure 2.

One other item that we need to consider is that development does not end at release. When thinking of games as a service, we say a game "goes live" when it is first released and "sunsets" when support ceases for the service. Several years may pass between first release and sunset. During that period, a number modifications take place. This is illustrated in the figure below:

The thicker bars represent major modifications. These could be related to expansion packs, DLCs, or major fixes. The smaller modifications are more frequent and are generally related to patch updates. Snapshots of the development environment will need to incorporate all these changes. The most common approach at Electronic Arts is to snapshot when the major modifications take place. Any patch modifications made up to that point are contained in the development

environment and should be captured together with the changes made to generate the expansion pack, major fix, or DLC.[7]

Figure 3



Source: Illustration by the Author

PRESERVATION AS A SERVICE TO DEVELOPMENT TEAMS

As was discussed previously, the work of preserving development environments on both the client and server side needs to be carried out by the development and game-services support teams. This means the company's preservationists need to engage developers early in the development process. Ideally at concept phase, since it may be desirable to capture concept art and early technical design documentation, as well as to establish a partnership with the developers. The key is to avoid acting simply as collectors at the end of the development process. At that point key personnel may have moved on or be in the process of transitioning to new projects, and it will be difficult to obtain their cooperation and feedback on preservation matters.[8]

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7 Wikipedia: "Patch (Computing)," *Wikipedia*, https://en.wikipedia.org/wiki/Patch_(computing). Last modified March 6, 2017.

8 Widyani, Yani/Ramadan, Rido: "Game development life cycle guidelines," *2013 International Conference on Advanced Computer Science and Information Systems*,

This requires that the Preservation team take the role of educator or guide, and assist the development team with fulfilling Preservation milestones which should go hand in hand with the development timeline. Because of the great degree of cooperation and coordination required between preservationists and developers in this model, preservation teams need to transform their activity into a service oriented operation.[9] Traditionally one thinks of the service component in Preservation to be on the retrieval side, i.e. when a researcher requests material from an archive repository. The paradigm here is that in the new model, Preservation becomes a service on the submission side as well.

There are many organizational models that one could use to structure a Preservation team or department to achieve the above goal. Whatever shape the organization takes, it must consider content creators, product owners, and preservation submitters its customers, and provide those customers support and a means to improve the services they engage with (e.g. by employing Agile methodologies[10]).

At Electronic Arts, the product or service offered for submission is a preservation development environment functioning in parallel with the live development environment. Figure 4 below provides a simplified diagram showing what this looks like.

As can be seen from the figure, the live development environment can consist of many types of endpoints (desktops, terminals, laptops, etc.) interacting and manipulating data in a datacenter while the preservation development environment is exclusively made up of virtualized components—chiefly virtual machines. Note also how the interaction between the developer and the live development environment is bidirectional. This reflects the check-out-check-in process required by software configuration management tools (e.g. Perforce). Explaining all the details of how the development environment is managed is beyond the scope of this paper. It is enough to know that changes to this environ-

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September, 2013, https://www.researchgate.net/publication/271548605_Game_development_life_cycle_guidelines

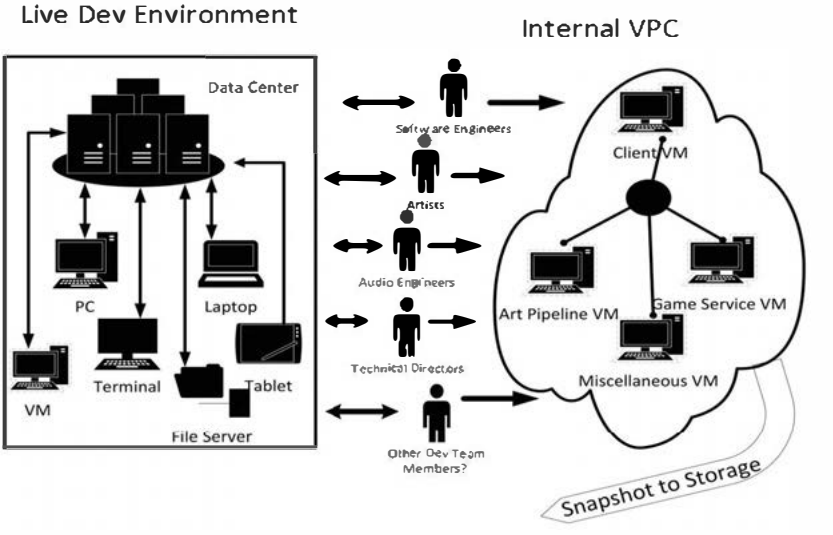
9 Nyman Nyman, Vic.: "Taking a service-oriented approach to IT operations," in: *Wired*, https://www.wired.com/insights/2013/03/taking-a-service-oriented-approach-to-it-operations/

10 Monjurul, Habib: "Agile software development methodologies and how to apply them," Code Project, Dec 30, 2013, https://www.codeproject.com/Articles/604417/Agile-software-development-methodologies-and-how-t

ment occur frequently and individual files can be checked in and checked out many times. In other words, several versions are made prior to game release.[11]

By contrast, there is no version control in the preservation environment. Files are added or updated when key events occur. Those key events are modifications of the type shown in Figure 3. When a major modification occurs, the VPC is snapshotted and stored. Snapshots will continue to be taken until sunset. Prior to final closure one last snapshot may be made if changes have occurred since the last major modification—perhaps a set of minor patches.[12]

Figure 4



Source: Illustration by the Autor

Preservation needs to track when key events occur to ensure that the development team is updating the preservation environment accordingly. Prior to backing up a snapshot, an engineer on the preservation side will verify that the state of the preservation environment reflects the state of the development environment at the time of a release (be it the main game, expansion pack, major fix,

11 Azad, Kalid: "A visual guide to version control," *BetterExplained*, https://betterexplained.com/articles/a-visual-guide-to-version-control/

12 N.N.: "Virtual Server Snapshot," *Cloud Patterns*, http://cloudpatterns.org/mechanisms/virtual_server_snapshot

etc.). If the preservation environment passes verification the archive is approved and the snapshot is made. During verification, the preservation engineer will be in direct communication with the developers in case something is amiss.

The verification guidelines may vary depending on what the company or organization hopes to achieve with its preserved IP. The specific guidelines used at Electronic Arts are extensive and beyond the scope of this paper to list and explain in detail. The guidelines are also modified over time to reflect changes in process, technology and purpose. Figure 1 however should give a high-level idea of what is expected from each development team.

Technology

The preservation product described above is essentially a software service. As with any software service, chosen technologies to support that service should follow a service oriented architecture (SOA).[13]

Cloud computing offers a way for users to interact with SOA based tech without requiring "under the hood" knowledge. In other words, cloud computing allows our archive submitters to drive the car without needing to know how it works.

The key to cloud computing is virtualization,[14] and one aspect of virtualized environments is that it can be snapshotted with relative ease. For preservation purposes this is obviously essential, particularly when dealing with highly dynamic environments, where various snapshots may be needed to capture all the different states of the environment corresponding to the given versions of the game.

There are other characteristics found in cloud computing that are desirable for a service oriented preservation operation. We list some of the most important below:[15]

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13 Box, Don/deVadoss, John/Horrocks, Kris: "SOA in the real world," *MSDN Library*, https://msdn.microsoft.com/en-us/library/bb833022.aspx

14 Navarro, Ted: (May 7, 2014). "The difference between cloud computing and virtualization," *ComputeNext*, https://www.computenext.com/blog/the-difference-between-cloud-computing-and-virtualization/

15 "Key features of cloud computing," *CloudTweaks*, September 3, 2012, https://cloudtweaks.com/2012/09/key-features-of-cloud-computing/; Healy, Rus: "The five essential characteristics of cloud computing," *Annese*, February 20, 2016, http://www.annese.com/characteristics-of-cloud-computing

- **Self-Serve**: Users provision and configure their own virtual machines
- **On demand**: Users are only charged for consumed resources and can add resources as needed
- **Collaborative**: Users can share virtual machines and synchronize their work
- **Preservable**: The state of the preservation environment can be snapshotted, backed up, and restored with little time and effort (as was explained above).

When backing up snapshots, it is important to package them in vendor agnostic formats. Depending on the complexity of the environment this may or may not be possible. The OVF format for virtual machines is considered universal, but some tweaking of configuration files may be needed to successfully import an OVF into a VM player different from the one used to generate it.[16]

Although a defining aspect of SOA design is that it be independent of vendors, this is in practice not reflected in cloud computing at the infrastructure level. This is particularly so with regards to snapshots and backups which offers an additional challenge to preservationists. Vendor dependence adds greatly to the risk of data loss if the vendor goes out of business or ceases to support certain features the backed-up environment depends on to function properly when restored. Another SOA requirement is that services be long lived, but this is a relative term, and a fair number of cloud providers have gone out of business making it necessary for repository managers to consider exit strategies.[17][18] In many cases this would mean setting up a mirror repository with another vendor, which can be costly and hard to synchronize with the original.

Finally, we should have a word about VPCs. These can be thought of as isolated clouds drawing resources from a public cloud environment.[19] In the case of

16 English, Mike: "OVF? OVA? VMDK?—File formats and tools for virtualization," *Atomic Object* , June 3, 2013, https://spin.atomicobject.com/2013/06/03/ovf-virtual-machine/

17 Addis, Matthew: "Exit plans: Know your escape route," *Preservation and Archiving Special Interest Group (PASIG) Conference*, New York, October 2016. Posted on figshare.com October 25, 2016, https://figshare.com/articles/Exit_Plans_Know_Your_Escape_Route/4029189

18 Marks, Howard: "The Nirvanix failure: Villains, heroes and lessons," *Network Computing*, October 15, 2013, http://www.networkcomputing.com/storage/nirvanix-failure-villains-heroes-and-lessons/1877028476

19 N.N.: "What is Amazon VPC". *AWS User Guide*. http://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/VPC_Introduction.html

large organizations such as Electronic Arts it is more likely that an internal cloud is used for security reasons, but for most organizations it may be cost prohibitive to implement and maintain an internal cloud. In that sense if speaking exclusively about preservation at Electronic Arts we should not be using the term VPC. However, the model shown in figures 1 and 2 still applies since the idea is to provide an isolated cloud to each development team, or a set of isolated clouds for the client and service components that can talk to each other but manage resources separately. The infrastructure used to achieve this is not relevant for that schematic.

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poralen in *Plague Inc*." In: Stefan Hoeltgen and Jan Claas van Treeck: *Time to Play: Zeit und Computerspiel* (Glueckstadt: Huelsbusch 2016); "PTSD: Zur politischen, medikalen und medialen Konvergenz eines Krankheitsbildes" (with F. Braune). In: Christian Hoffstadt, Franz Peschke, Michael Nagenborg et al. (eds.): *Nur Emotionen?: Einblicke aus Medizin, Kunst und Geisteswissenschaften* (Bochum, Freiburg: projectverlag 2016). Website: www.uni-duesseldorf.academia.edu/ArnoGoergen

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