

Introduction

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In the winter semester 2009/2010, the Digital Game Research Center of the University of Potsdam was able to hold the DIGAREC-Keynote Lectures for the first time. It followed a lecture series held in 2008/09, in which the members of the center introduced their research projects, spanning the fields of design, law, information science, psychology, and media studies. Together with the presentations of the 'scientific forum' at the German Game Days 2008 and 2009 in Berlin, the respective papers are published in the second Volume of the series.

Following up to this and with the support of the film-and mediafund of the Medienboard Berlin-Brandenburg as well as of the German association supporting computer game research, Gamology, DIGAREC was able to invite six keynote speakers to the University of Potsdam. The keynotes focused on the culture and nature of digital games and were held by Mark J. P. Wolf (Concordia University Wisconsin, USA), Espen Aarseth (IT-University Copenhagen, DK), Katie Salen (Parsons The New School for Design, New York, USA), Frans Mäyrä (University of Tampere, FIN), Keiichi Yano (iNiS, Tokyo, JP), and Lev Manovich (University of Southern California, San Diego, USA).

Espen Aarseth and Katie Salen were co-invited by the School of Design Thinking of the Hasso Plattner-Institute on December 3, 2009 and January 14, 2010, respectively, to speak at the campus Potsdam-Griebnitzsee. Keiichi Yano gave his presentation on "The Future of Music Games" on January 31 at the A MAZE.-Festival in Berlin. Lev Manovich's talk on April 22, 2010 opened the summer semester 2010 of the bachelor- and masters-programs in European Media Studies (EMW). It is a joint venture of the Department for Arts and Media at the University of Potsdam and the Department of Design of the University of Applied Sciences in Potsdam. Like Frans Mäyrä's talk

on February 4, 2010, the presentation of Manovich was given in the Audimax-building of the University at the campus Neues Palais.

The opening keynote lecture by Mark J.P. Wolf on November 5, 2009 also opened the conference “Logic and Structure of the Computer Game”, which took place at the House of Brandenburg-Prussian History in Potsdam over the following two days. The conference was supported by the German Research Foundation (DFG) and its results are published in Volume 4 of the DIGAREC Series. After Wolf’s talk, a panel consisting of Barry Atkins from the School of Art, Media and Design at the University of Wales in Newport (GB), Gordon Calleja from the Computer Games Research at the IT-University of Copenhagen (DK), and Rune Klejver from the Department of Information Science and Media Studies at the University of Bergen (N) were invited to discuss trends in current game studies and to respond to the papers of the invited German scholars.

The papers of Mark Wolf and Espen Aarseth are original pieces published here for the first time. Katie Salen’s paper is simultaneously published in the journal *Second Nature*. Frans Mäyrä’s contribution is the reissue of a pivotal paper on immersion in games which he presented first together with Laura Ermi in 2005 at the DiGRA-conference in Vancouver. The reworked paper is preceded by a new introduction. Lev Manovich’s article is available as a pre-print version. The presentation of Keiichi Yano does not exist in written form and thus is not included in this volume. Except for Keiichi Yano’s presentation, all keynotes are also available as video on the website of the University of Potsdam. In three cases, these presentations vary from the printed version, which is indicated by the differing title of the talks of Espen Aarseth on “Locating the Game in Computer Games. From Game Structure to Game Semantics”, of Frans Mäyrä on “The Dual Structure. Experiencing Digital Games in the Intersection of Gameplay and Media”, and of Lev Manovich on “Visualization as a New Language of Cultural Theory”.

Alternating with the keynote lectures, the regular lectures continued and papers of associated members of DIGAREC were presented. Participants were Jan Derer from the Media Design School Berlin on “Artificial Intelligence in Game Design”, Stephan Humer from the University of Applied Studies Potsdam on “Digitality and Imagination”, and Georg Spehr from the University of the Arts Berlin on “Game Sounds”.

Mark Wolf, Espen Aarseth, Katie Salen, and Frans Mäyrä gave workshops for students of the MA program European Media Studies and invited guests at the University of Potsdam in addition to their lectures.

Mark Wolf's lecture on “Theorizing Navigable Space in Computer Games” was his first presentation in Europe. When Game Studies were established about ten years ago, they were very much occupied with the question whether digital games should be studied as a new form of texts or rather as a new form of games. In this discussion, a simple solution was overlooked. In other words, the debate between ‘ludologists’ and ‘narratologists’ would not have been necessary if the participants would have just read the works of Wolf carefully: During the heyday of the debate in 2001, he published a book entitled *The Medium of the Video Game*. Its editor and main author exactly pointed out what game scholars have to take into consideration: Computer Games are, in the first place, media in their own respect. This does not only mean that they need a computer to run – but what runs on the computer is something that has not existed as such before.

To consider the implications of the computer game as a medium became the frameset for his overwhelming work on digital games with numerous articles and books: In 2003, for example, Wolf edited a volume on *Virtual Morality* in which he anticipated a discussion which is now becoming prominent: the question of ethics in computer games. In the same year, he also published a compilation which is compulsive reading for game scholars until today: *The*

Video Game Theory Reader, the second volume of which has just been published in 2009 (In both cases the coeditor is Bernard Perron from the University of Montreal (CA), who in 2008 contributed to the first DIGAREC conference, the Philosophy of Computer Games Conference in Potsdam). Furthermore, in 2008, Wolf edited a comprehensive study on the history of computer games, entitled: *From Pong to PlayStation and Beyond*.

The main reason for inviting Mark Wolf to Potsdam, however, was that he works on two aspects that are essential for the understanding of digital games at DIGAREC: the *medium* and the *video*. When opening his book from 2001, a significant doubling can be noticed: The book does not only say “The Medium of the Video Game” on its cover, but there is also a chapter on the inside bearing the same title. By doubling the title, he pointed out that there is a difference between computer games as media and the computer game as a medium. While the media as artifacts are distributed on various platforms, like personal computers, consoles or even mobile phones, the medium is more than a technical device or a software package.

For this dimension, the expression ‘mediality’ is used at DIGAREC as opposed to medium. Others might address it as the ‘aesthetics’ of digital games or as their ‘morphology’ (as the very form of the medium). No matter which term will prevail, all these conceptual suggestions emphasize the fact that computer games bear certain elements they use to mediate whatever their content may be. And all these elements, forms, and appearances come together in the ‘video’ as *self-seeing*. It is not only that Wolf uses the word ‘video’ as an American scholar, where the term ‘video game’ is more common than ‘computer game’ or ‘digital game’. What he mainly addresses becomes clear when one has a look into the other chapters of his book: Here one can find headings like “Time in the Video Game” or “Space in the Video Game”. At this point, it is no longer features of the hardware or the software which are addressed, but possible ex-

periences of mediation. Just as philosopher Immanuel Kant wrote in *The Critique of Pure Reason* that the condition of any experience is 'time' and 'space', Game Studies can learn from these findings that video games come into being as modalities of perception, predominantly the perception of an *interactive image*.

Coming from film studies, Mark Wolf took a concept that was originally developed by the francoamerican film-theorist Noël Burch and transferred it from movies to games. Doing so, Wolf tried to do justice to the very essence of computer games as modalities of perception and forms of mediation. The difference between the space *on* the screen and the space *off* the screen can be traced back a long way in the history of the picture itself, at least to the paradigm of the Renaissance, in which the picture plane according to the picture theory of Leon Battista Alberti is defined as an 'open window' to the world.

But other than Alberti, Wolf – with Burch – does not stress the aspect of pictorial illusion as much as the difference between what is presented by the picture and what is not. This is what is hidden by the frame and could or could not become an object for cognition. Wolf thus is able to rewrite the development of computer games in terms of a spatial or pictorial logic. In other words, the difference between *onscreen* and *offscreen* space is in itself a logical one: a logic of exclusion and inclusion, which also allows for hybrid configurations. Such a hybrid configuration may be an inclusion of the excluded as it is the case with onscreen representations of offscreen space in in-game mini-maps or in the cases of the so-called 'fog of war', in which certain areas of the playground are covered and cannot be seen and used by the player. However, the difference at stake can very well be witnessed in early games like PONG (Atari, 1972), where the aim of the game for each player is to keep the ball onscreen and to force the opponent to miss the ball and let it go off the screen.

Furthermore, in a recent article from 2009, entitled “Z-axis Development in Video Games”, Wolf reconstructs how pixel-graphic based games and vector-graphic based games need to not be seen under the misleading perspective of pictorial ‘realism’. Rather, it is suggested to regard them from the vantage point of the given limitations of a computer system and how the specific style of video games comes into being. Along the way, Wolf, for example, considers that the style of the first-person shooter with the characteristic limitation of sight and the bending of the pathway is not so much an attempt at resembling reality, but that it is the only mode in which 3D-presentations could have been implemented in the mid 1990s: As the graphics had to be rendered in real-time, designers had to keep the details low in order to limit sight and to bend the pathway.

Espen Aarseth is a researcher at the Center for Computer Games Research at the IT-University of Copenhagen. The center was established in 2003 and Aarseth was its director until 2008. The center was a major inspiration and model for DIGAREC in Potsdam. Before Aarseth went to Copenhagen, he was Professor at the Department for Humanistic Informatics at the University of Bergen since 1996. It dates back to these days, more specifically to 1997, that he published a book that without constraint can be called a *classical* text of game studies (it has even been translated into Spanish and Korean in the meantime). The book is entitled *Cybertext* and took up a discussion which until then had mainly been led in North America. It concerned the question of *interactive fiction* as a new genre of literature in the light of recent developments. In this case, this meant the emergence of hypertexts and a new ability to read and write.

Aarseth said that this new ability was an art, and described it as ‘ergodic literature’ – a term which became a standard not only for game studies – highlighting the fact that in this type of narrative, the work itself is produced along the way of its reception. However, it is remarkable that, even though he can be considered the founder

of Game Studies (see the influential online-journal with the same name that was inaugurated in 2001), his approach was always much broader than the mere study of the computer game. In the case of his book on *cybertextuality*, for example, Aarseth looked at literature in general, and when he is analyzing games, he also always looks at them in the light of games in general. It is essential to his approach that he took the aspect of space to be a key to the understanding of computer games from the very beginning. This, by the way, positions him close to Mark Wolf on the landscape of game studies. In a short but influential text written in 1998, entitled “Allegories of Space” (first published in a German translation by Karin Wenz in the *Zeitschrift für Semiotik* in 2001), Espen Aarseth stated that the topic of every computer game is space, as it is a metaphorical transition and selection or an accentuation of an experienced space. Taking this position as a starting point in many conference contributions and essays, he then analyzed the very structure of games in respect to their spatial playability. He pointed out important categorical differences such as ‘omnipresence’ against ‘vagrancy’, and ‘metrical’ against ‘topological’ gaming, or ‘fictional’ aspects of game space in contrast to its ‘simulational’ parts. This provided game researchers with tools to better talk about games in their very essence. Aarseth laid the ground for a self-sufficient computer game research.

Many of his papers demonstrate that there is also a strong connection between ergodic literature and spatial analysis: In a paper on “Quest Theory” from 2004 (published the following year in the *Lecture Notes in Computer Science*), he demonstrates how computer games can be understood as a spatial practice consisting of quests of various forms. It becomes clear that narration understood as the possibility of choosing options in order to fulfill a certain task is no different to a game, which can be understood as a series of choices. In line with his previous publications, Aarseth, in his contribution to the volume at hand, gives “Remarks on Game Ontologies”, in which

he lays out the basis for game analysis by qualifying the status of the 'real' in games and how the range of gaming cannot be simplified by a definition of what a game is. Rather, the very structures of games have to be described.

Katie Salen, who gave her first talk in Germany, is well-known for being an expert in (at least) three fields: She is a designer, a teacher, and a theorist. As a theorist, her name, together with Eric Zimmerman, is closely connected with *the* main topic of game studies: With the publication of the handbook of game design, *Rules of Play*, in October 2003, she and Eric Zimmerman explicitly outlined the concept of the 'Magic Circle' in order to describe what is specific about games, which is, in short, that they are separated from the 'real world'.

Even though the term 'Magic Circle' itself can be found in classical game theory (namely in Johan Huizinga's *Homo Ludens* from 1938), it was not until the publication of the book *Rules of Play* that the term was valued as a key-concept for understanding games. Many discussions took off from here, asking whether it is justified to talk about computer games as such closed circles or not. (Researchers like Jesper Juul in his book *Half-Real*, for example defended the notion, others dismissed it as being appropriate for traditional games, but not for digital games.) Hardly acknowledged, however, is the fact that Salen and Zimmerman themselves already qualified the term as only being useful for describing games as rule systems, but not as events in the cultural context. In the latter, they are always part of the real world. *Rules of Play*, which is the standard handbook in the field of game research and design, was followed by the *Game Design Reader* in 2005, an anthology to *Rules of Play* containing essential texts on games in general and computer games in particular.

But Katie Salen is not only a theorist, she also is a game designer herself, as well as an animator for music videos and films, like Richard Linklater's famous movie *Waking Life* from 2001. As a game designer,

she specializes in mobile games and online worlds. Since 2006, she is also the executive director and founder of the *Institute of Play* in New York, which aims at educating in 'gaming literacy'. An amazing enterprise began for this purpose: In October 2009, the public Gaming School in New York was opened, in which children learn by playing. The idea of gaming literacy not only implies the idea that playing is an ability equal to reading and thus has to be learned, but also that gaming can conversely be a method of learning in general.

The agenda of her school is to not only provide knowledge by presenting dates, facts, and content only, but to make pupils use it in practice: The curriculum makes children behave like scientists – taking science as a way of experimenting and playing. In the educational context of her work, another book of her has to be mentioned; in 2008, she edited *The Ecology of Games*, with contributions on the educational value of games, e.g. by Ian Bogost (who, along with Jesper Juul and Richard Bartle, gave a keynote presentation at the Philosophy of Computer Games conference in Potsdam). Katie Salen's keynote lecture on "Pokéwalkers, Mafia Dons, and Football Fans" refers to recent developments in social networks and online gaming. She thereby focuses on the concept of meta-games: that which happens outside, between, and during gameplay, other than analyzing the game itself.

Frans Mäyrä from the University of Tampere in Finland is Professor of Hypermedia at the Department of Information Studies and Interactive Media since 2002 and the Head of the Department's Game Research Lab Group. Furthermore, he is the Founding President of the world organization of game studies: the Digital Games Research Association (DiGRA). He was its president from 2003 to 2006 and thus responsible for the first two conferences of the association, which set the tone for international game research until today: 2003 in Utrecht and 2005 in Vancouver.

Mäyrä studied Art History, Literature, Cultural Studies, English Philology, and Social Psychology. In 1999, he became Doctor of Philosophy at the University of Tampere, with a work on “Demonic Texts and Textual Demons”. The thesis starts with the history of the *daimon* (the voice of the soul) and stretches out via Goethe’s *Faust* and Nietzsche’s *Birth of Tragedy* to Rushdie’s *Satanic Verses*, while also providing insights into Gothic Fiction.

Taking these works, one could guess that this makes him a candidate for being called a ‘narratologist’ in game studies. However, as he demonstrates in his recent book from 2008, he is an expert in all branches of game studies as well as in the medial structure and cultural contexts of games.

Mäyrä’s book *Introduction to Game Studies* from 2008 probably is the best introduction to the field available. It is both a working book for student classes as well as a resumé of the most prominent topics of current game studies. The book also holds a contribution of his dating back to the second DiGRA-conference at which he presented a paper together with Laura Ermi redefining the sometimes ambivalently used category of ‘immersion’.

In this paper, Ermi and Mäyrä split immersion up into three different aspects: 1. sensory immersion, 2. challenge-based immersion, 3. imaginative immersion. They bring together the three leading paradigms of computer game studies; that is, the game as ‘video’ (in the sense of Wolf), the game as ‘game’ (in the sense of Aarseth) and the game as ‘narration’ or imagination. Mäyrä, just like Salen, studies the social aspects of play, and in the original talk in Potsdam about “Experiencing Digital Games in the Intersection of Gameplay and Media” he prefers using the challenges and benefits of interdisciplinary and multi-methodological studies for games cultures. In his new preface to “Analysing Immersion”, Mäyrä gives a resume of the development of immersion-studies since the first publication of the DiGRA-paper.

Lev Manovich is professor at the Visual Arts Department at the University of California – San Diego and director of the Software Studies Initiative. When he published his book *The Language of New Media*, in 2001 he immediately was recognized as the Marshall McLuhan of the next century. In fact, by defining what is new about New Media, Lev Manovich overcame McLuhan's approach to define media as extensions of man and as technologies which determine their content by means of their material being. On the contrary, according to Manovich, one needs to understand the software (rather than the hardware) to understand new media. Just like he did already show in his Dissertation from 1993 on *The Engineering of Vision*, software can simulate any medial form that has existed before and was linked to certain hardware. Today, however, hardware itself has been overcome and preserved at the same time due to or within software. To speak with Hegel: hardware was abolished by it. This applies to photography as well as to cinema, which in the beginning were of particular interest to Manovich.

But in the course of the book from 2001, one medium came into consideration that was not abolished by software but came only into being through it: video games. The respective chapter on "Navigable Space" was presented at a conference in Karlsruhe on *Cinema in Transition* in 1999 and was first published in German in 2000. Again, it becomes obvious that at the beginning of Game Studies, whether coming from film like Wolf or from literature like Aarseth, 'space' was the key to understand that paradigmatic new medium. In his article, Manovich refers to two games that were published in the year of his Dissertation and are both milestones in the history of computer games: DOOM and MYST. Even though both do offer a perspectival, 'three-dimensional' view of space, they could not be more different: In DOOM, the rendering of space takes place in real-time, whereas the virtual space of MYST is a collection of pre-rendered images. While the first is an action-game in the literal sense, the latter stands in the

tradition of a point-and-click adventures. Nevertheless, Manovich argues that *MYST* offers a way of free orientation (searching the whole surface of the screen), whereas in *DOOM* navigation is restricted to a certain path (canalized in the labyrinth). This difference is aesthetic and thus constitutes a difference in the perceivable form of the medium. To Manovich, this mediality of games, as it could be called today, is in both cases characterized by a specific characteristic of software. Manovich uses Erwin Panofsky's term, calling it a spatial 'aggregate'. This again links up to Wolf's contribution, in which video game spaces can not only be described due to the difference between on-screen space and off-screen space, but also due to the type of connection between spaces or spatial parts.

In his recent work, Manovich intensified his research on software and started to work with software itself in order to analyze the visual culture of the 21st century. His recent book *Software Takes Command* will be published in English in 2011 and is already available in an Italian translation, as well as online under a Creative Commons license. It is at the same time an introduction to the field of software studies in general. The article published in the DIGAREC Keynote Lectures volume discusses some case studies in relation to the question "What is Visualization?" The starting point as well as the central object of the text is the visualization of information and in which way the use of computer software changes it. Of special interest to Manovich is a form of direct visualization, while gathering the complete set of data in programs, so that the scale of depiction can be varied by the user.