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The Medial Form of Computer Games

The claim is made that in order to analyze them sufficiently, computer games first of all have to be described according to their mediality, understood as the very form in which possible contents are presented to be interacted with. This calls for a categorical approach that defines the condition of possible actions that are determined by the program, but that can only be perceived as aesthetic features.

With the publication of Mark Wolf's *The Medium of the Video Game* in 2001, a shift in Computer Game Studies became obvious. Until then, and arguably even for some time after, game studies had mainly focused on the question of whether computer games are, first and foremost, digital games or interactive stories. This dispute between ludologists and narratologists had at least one important consequence: computer games became a serious topic of academic research beyond the question of their psychological and social effects. Both groups, however, tried to define other aspects of computer games in other terms: while narratologists regarded them as a combination of signs, ludologists looked at them as a set of rules. Both took for granted – and likewise ignored – the fact that computer games are based on computers. This is exactly what Mark Wolf highlighted: video games are a specific kind of medium. One could add that they are a new medium in their own right.

Mediality

Yet the reader who takes a look inside Wolf's book will find a strange doubling of the concept of medium. The first chapter is entitled "The Video Game as a Medium", which could have been meant as an introduction, but is not. What Wolf primarily does here is to describe the

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technical infrastructure of game consoles and their graphical output units. Thus “medium” actually means technical medium. Today, this is quite a common definition. But why, then, is not the whole book about the history of computer game consoles and input devices? The main part of the book contains entries like “Space in the Video Game” or “Time in the Video Game.” Why do such topics appear in a book on the medium of the video game? Our argument is that Wolf had something different – and important – in mind: he undermined not only the debate between ludologists and narratologists, but also the accepted practice of limiting the discussion of a medium to the description of its mere technical properties. It is only that Wolf has no term for what was addressed with this approach – something that can be termed “mediality.”

The mediality of video games is what makes the medium of the video game a distinct medium. As a technical medium one cannot distinguish a gaming device from any other computer. This is why the computer has aptly been referred to by Alan Turing as a “universal machine.” A computer can be literally anything. Considering solely the hardware and software, one cannot distinguish between a video game and any other machine or program. This is due to the fact that a computer game does not differ essentially from a simulator or a text-processor in a technical respect. But a computer game does differ from these according to how the program is used. What makes computer games different from any other artifact in the world is their specific mediality, i.e. the form in which content is mediated.

The Form of Games

So what, then, is the specific form of computer games? This does not depend on the way the data are processed, but rather on how the data appears. The question then is not why or how it appears technically, but how it appears perceptually. The answer is that the data appear in the form of a simulation which is present on a screen. What

is meant by this is that computer games are pictures with which the user has to interact in order to perceive them as something other than a movie or a static picture. At this point it could be rightly argued that this is also true of any flight simulator, and not only a flight simulator on a home computer, but, more importantly, those used for pilot training. Yet such a flight simulator is not considered to be a computer game, so there must be another factor apart from the aspect of the technical medium that makes a computer game a medium of its own.

Here, the ludological approach offers an important insight. It sees computer games as digital versions of games. This supposition needs a slight modification: Although traditional games, such as chess, are available on computer, the majority of computer games have no precursor. So it is not that games have become digital, but rather that the digital has become a game. According to classical ludologists like Friedrich Schiller and Johan Huizinga, a game can be defined as something that has a meaning in and of itself. In his book *Homo Ludens* Huizinga (1955) states that it constitutes a world of its own, drawing a distinction in time and space between itself and the real world; and Schiller (1967) in *Aesthetic Education of Man* simply announces that through play people can conceive of themselves as “free.” In both game theories the important statement is that of the immanence of playing a game.

Simulation and Reference

To put it in modern terms: something becomes a game when it is not used in reference to something other than what it is. This can easily be explained in the case of the flight simulator as well as the text editor: When used for pilot training, the flight simulator refers to actual airstrips or flight corridors and the behavior of real planes. But when a flight simulator is played, the gamer solely makes use of the interactive picture as such, even though the properties and contents are

mainly derived from actual airstrips and flight vehicles. The features of the software program are not used in order to improve flying skills. At this point the medium does not differ, but the mediality does. To be more specific: the mediality is revealed through interaction with the hardware and software.

Schiller contended that to play means to be in an aesthetic state. When engaged in a game, one does not refer to something outside the game, but rather to what the game itself is: a specific setting with certain rules. In most cases games are meant to be played, but one could also play with things that are not considered as something to be played with. This is the case with a word processing program: the everyday use of such a program is mainly referential. Just as this text has been typed in order to appear in the proceedings, certain software is used to publish and edit texts. But editing in particular can be done playfully – for example, when one tries out a new program to learn its various features by playing around with the settings, changing fonts and format, etc. In these situations the software is being used like an open-ended game. The program and interface parameters constitute the range of possible actions one can undertake in this experiment with colors, formats and fonts just as they provide the player with a framework of possible actions in any computer game; we just do not think of it as a game – mainly because the package says something else. Thus, when we use things for play, we make use of what they offer in terms of properties. In the case of the flight simulator, the properties of a virtual machine; in the case of the writing program, the properties of different styles and formats.

This means, in turn, that a game program could also be used with a specific reference to factors outside the game. One could certainly use it, for example, to train to kill people, as some people believe to be the case when computer-game-playing youths commit school massacres. In fact, players of the game *AMERICA'S ARMY* (2002) are, in essence, training to act as a team in combat situations and to use

actual war tactics. But no matter how “realistic” the simulation, it does not necessarily follow that a user will use the game in reference to something outside the game – it is possible to play it purely as a game.

What is important here is that both uses are not interchangeable; one can use a simulation as a game without using it referentially, but one must use an actual simulation according to the characteristics of the interactive picture. In other words, one cannot use a simulation without using it on the basis of its medial structure, constituted by its specific aesthetic features. These features are put in relation to the external world when used as a simulation and they are not put in such a reference when used in the context of play.

Rules and Actions

What one does not see explicitly, but notices directly while interacting with the simulation, are the rules of a game. As Katie Salen and Eric Zimmerman (2004) make clear in their design-oriented interpretation of games, rules are the part that structure play. They provide the player with meaning and recognizable consequences of the actions performed. Yet, as opposed to non-computerized games, in computer games they do this actively: as the rules are part of the program, the action possibilities defined by them “enable” gameplay in the first place. Without the specific coding, no actions could be undertaken at all.

In the factual world of the airplane, hitting the ground mistakenly naturally leads to a fatal crash, whereas in the flight simulation, the procedure of such a crash has to be defined in the code – hence it has to be actively provided by the program. Based on this elementary difference between flying in the physical world and using a flight simulator, different layers and types of rules can also be distinguished within computer games (which of course also is one of the main reasons why flight simulators are used in professional context in the

first place – it makes training safer). A first differentiation lies in the distinction between positive and negative rules. The collision map of the ground for example has a rather negative influence on the action possibilities of the player as it defines the borders of the space to be explored; whereas the control mechanisms of the airplane positively influence the gameplay. As they define how the player can take part in the simulation, they actively open up the range of experiences. These two basic types of rules in computer games may be called environmental rules and action rules: the first defines how the fixed elements of the game space influence the gameplay, while the second type addresses the directly controllable elements of the game.

Analyzing the Mediality of Computer Games

The benefit of focusing on the mediality of computer games is less an empirical than an analytical one. Indeed, we should mention that the state of pure play is very rare, and cannot be anticipated or derived from the medial structures. Nevertheless, the structures that unfold while playing a game can very well be described. Such insights would be useful not only in addressing ontological questions, like “what is a computer game?” (a question that can now be transposed into “when is a computer game?”), but also for empirical research in the social sciences, in particular in psychology and education. Just as a report from the University of Southern California summarizes: Over the past thirty years there has been a large body of research on the effect of computer games on (mainly juvenile) users, which has investigated only the medium’s contents, but there has been almost no research on the effect of medial forms (Lee/Peng 2006). In other words, the depiction of killing someone has, in the past, led to the assumption that the user takes this particular image at face value, whereas the way the action is depicted has been ignored. So, analyzing the mediality of computer games can provide a vocabulary for these characteristics and uncover the unique qualities of computer games as such.

Simulation Picture

In this vein, some recent developments in game studies can be understood as descriptions of medial properties, which can lead to a new understanding of computer games beyond the particular realm of game studies. For example, Espen Aarseth (2006) proposed the differentiation of three aspects of computer games: fictive, simulative and real. Examples of these three aspects would be the door of a house in a game labyrinth that cannot be opened (fictive), as opposed to a monster that appears and can be killed, and which is thus simulative. But the weapon with which the monster is shot is real in the sense that it has the power to affect the simulation. (The main criterion which, for Aarseth, allows us to attribute realness is the fact that weapons and other items are sold outside the game just like any other real goods.) They can be used and bring in unique values to the game. In line with Jesper Juul (2005), this idea of the real must be extended to the rules of the simulation themselves, as they define players' possible behavior within the simulation in general.

Given that the main mediation form of computer games is that of an interactive image, Aarseth's categories can be ascribed to the pictorial layers of a computer game. Thus, in most games the background is fictive, whether it is a receding horizon or the wall that delineates the space of action in the game. However, when such a wall is "invisible" the fictiveness of the picture is mainly perceived as a limitation of interaction, which in turn is a feature of the simulative aspect of the game. Whereas the fictional part can be found mainly in the background of the picture, the simulation itself is, in most cases, in the centre, where objects the user can interact with appear. Nevertheless, those objects (monsters, soldiers, boxes etc.) are of necessity also fictive, insofar as they have a certain "skin." But the way they behave when acted upon is simulative and has real consequences for

the continuous actions of the player. The weapon in the foreground then has fictive as well as simulative aspects, but is also real in the sense that it can affect the simulative parts of the picture.

Game world Interface

In contrast to the clear-cut distinction between the simulative, the fictive and the real, suggested by Aarseth, the three levels of the interactive picture regularly overlap and converge. This also happens with the graphical status information interface in the foreground. It is placed outside the action space of the game, but is still part of the overall picture. These information-displays indicate to the user how many remaining lives or how much ammunition he still has. As Alexander Galloway (2006) has shown, this level of the picture of computer games is increasingly masked through its inclusion in the game world. To put it in the terms of film studies, the extradiegetic features of the simulation picture become intradiegetic. The most striking example of this is the “Head up Display,” which is a standard in shooter games today. The information on the real status of the player’s virtual power in the game world appears as a fictive or even simulated part of the game world, just like the weapon in first person shooter games. As such, all real elements of computer games nowadays appear as hybrid elements: a weapon is an intradiegetic extension of the display and the HUD is a projection of the real on to the simulation.

But this is not the only line that is crossed. With the environment becoming more interactive, the line that divides the level of the fictive from the simulated is also being blurred. And a more interactive environment calls for relevant objects to be highlighted, in other words, marked relevant – and thus real in the sense of Aarseth – in the context of the game, as is already the case with the various powerups that appear intradiegetically as boxes.

Interaction Forms

Beside the distinction between the formal aspects of computer games as pictures with interactive as well as passive parts, another distinction can be made in respect to the simulative level itself. In semiotic terms, this is the difference between denotation and exemplification – the difference between two ways of using things as signs (Goodman 1976). In the case of a computer game, however, it does not refer to something external, but to internal elements. Denotation entails the asymmetrical use of an element, exemplification the symmetrical. This means that the relation between two denoted elements can be totally arbitrary, whereas an element used to exemplify something bears the same features as the element that is being exemplified.

In a chess game, for example, neither the size of the figure nor of the game space matters. The interaction is based on symbolic conventions of what can be done with a certain figure. The figure of the king does not represent the attributes and behavior of the socio-political ruler of a feudalistic state, but a range of possible actions or movements defined in the rules of the game. On the contrary, in a shooter game the pictorial presentation of objects also displays their function. The image of a gun also has the function of a gun in the game: it shoots bullets and hits targets. Moreover, the metric space between objects and their relation to the point of action matters. The size of the objects can be relevant, as well as symbolic. This is the case with most of the “boss enemies.” Even though they may appear twice as large as regular enemies, they are not twice as difficult to fight. There might only be a certain spot that players have to hit to vanquish them, which could make them easier to defeat than regular enemies. This phenomenon could be described as an incorporation of a symbolic principle into the diegesis of the game world.

Gameplay Mechanics

In game design theory, a clear distinction between a game and play has become necessary, as designers create the rules of the game and in this respect try to control the behavior of the player and limit the possibilities of interaction. Yet, as also shown in reference to the text-editor, they can neither wholly control what exactly the players will do in the end, nor why or with which motivation they do what they do. Hence, the notion of gameplay has become a relevant factor in the design-oriented research of computer games. Gameplay describes the dynamic aspect of a game as a correlation between the rules of the game, the goals and strategies of the players, as well as the fictional or representative layers of the software. Despite all disputes on the relevance of fiction in games, it is the screen (the main channel of reception) where the effects of the players' actions are related to the rules. Even in games and consoles where the actions in front of the screen become more symmetrical with the actions on screen (e.g. with the Wii), the understanding of the game rules and the consequences of the action depend on the information provided by the game system. Setting such special interest games for people with visual impairment apart, computers always depend on the principles of the interactive picture. It is the image – hence the presentational level – where the mechanics and rules of the game are mediated.

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