

PAPER AND POLYGON.

Theming and Materiality in Game Studies and Game Design

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ABSTRACT:

This contribution to the research on games and materiality has two goals. On the one hand, it deals with a problematic generalization in computer game research and, on the other hand, it tries to point out an omission in game studies and gives some hints as to which investigations of game materiality this omission requires. The problematic generalization is that games are *themable*, meaning that every game can be equipped with an arbitrary representation (theme) without changing, while the omission concerns the lack of research on the decisive role of materialities in the game design process, which has only been taken into account by publications on design practice. The underlying assumption is that there is a relationship between both topics that makes it possible to criticize the generalization with regards to the omission. Accordingly, this paper is divided into three sections: (1) an explanation of critique of the idea of theming; (2) an elaboration on its generalization with reference to pedagogy in the second part, and outlining a proposal for dealing with the materiality of digital games in the third part.

Keywords: theming, materiality, material, paper prototyping, play, design

1. THEMING

The Danish game researcher Jesper Juul (2001) first posed a hypothesis at a conference in Copenhagen in 2001, which was taken up again in a more prominent place and became accessible in published form by Espen Aarseth (2004), and finally by Juul himself in 2005: "games are themable [...], the representation and fiction of any game can simply be replaced with something else" (ibid., 189). This means that the game's rule system is independent of both the fiction that legitimizes it and of the media and materials that represent it. Aarseth (2004, 48) uses the example of chess to make it clear that chess is the same game¹ whether it is played with stones or Simpsons figures. Hypertext researcher Stuart Moulthrop (2004, 48) replies to this claim in the same volume by pointing out that one could hardly assume that swapping Lara Croft for Rowan Atkinson would have no effect on the popularity of TOMB RAIDER, which in turn prompts Aarseth (2004, 49) to explain that Lara Croft's polygon body has significance beyond the gameplay, but that it does not allow any statements to be made about the gameplay. At the beginning of the 21st century, the discussion about the *themability* of digital games, which is merely touched upon here, unfolds as a kind of sideshow in the debate about ludological and narratological approaches to digital games, whose formative significance for early games research has been both emphasized² and fundamentally doubted (Frasca 2003). This essay is not intended to be a retrospective intervention in these discussions, but rather as an approach to the materiality of (digital) games using the example of theming.

For Juul and Aarseth, the *themability* of games is an important argument in their attempt to ward off the "academic colonialism" (Aarseth 2004, 49) of disciplines such as literary studies, which they deem unable to adequately deal with digital games. In the sense of its origin within the debate on ludology and narratology, the claim of *themability* must thus be

¹ Given the focus of Aarseth's argument on the rules system of the game, one could even speak of the same game here.

² See, for example, the detailed review of the debate in Stephan Günzel's (2012) monograph on first-person shooters: *Egoshooter: Das Raumbild des Computerspiels*.

understood not only as a statement about the nature of games, but also as a strategic positioning in the discourse. At the level of content, *themability* assumes that the rule system of a game is separable from the representation or material-semiotic design of said rule system (for example, the graphics in digital games) and that there is a hierarchy to this differentiation: the rule system is decisive, its representation is interchangeable – in other words, *themable*. Finally, according to Aarseth, the rule's representation does not allow any statements about which gameplay the rule system or game enables. At a strategic level, this justifies the need for game studies as its own field with clear borders to other disciplines because it claims to be the only one that can examine the rule system and the gameplay of games. First of all, however, it remains unclear how Aarseth (2004, 47-48) defines gameplay at all since he only understands the term as the interaction of rule system and representation while ignoring the fact that this interaction is only possible in relation to a player (or an operator, according to Galloway 2006). Even the simplest games must be initiated by a player, even if all subsequent processes run automatically. The gameplay must therefore be enacted and, in most cases, actively brought about or designed by the player, which means that the rule system of a game alone allows just as little to be said about its gameplay as its representation – in both cases it is important to consider the act of playing itself as well.³ At this point, we should return to Moulthrop's thought experiment: A TOMB RAIDER game in which Lara Croft was replaced by Rowan Atkinson would undoubtedly not only see consequences in its sales figures, but also lead to changes in its gameplay. Secondly, countless developments in popular and academic discourse on gaming since Juul's and Aarseth's claims demonstrate that the relationship between rule system and representation is far more complex than claimed in the context of *themability*; if it even makes any sense at all to analytically separate the two areas.

An extensive discussion of the developments mentioned above would require a separate essay, which is why only a few cursory sites of debate

³ An ontologically differentiated perspective on gameplay, operating with Heidegger's concept of Dasein, is outlined by Larsen and Walther 2020.

concerning the relationship between rules and representation in games can be mentioned here. In recent years, the politics of representation and gender identity in digital games and their production and marketing have been criticized by feminist media critics and in research linking gender and game studies. Those works regularly address both a game's rules and their representation in order to point out that it is not irrelevant for the player or for gameplay what gender the player character has or what options the game offers for modifying the avatar.⁴ Once more referring to TOMB RAIDER, from a gender studies perspective it is apparent that it makes a difference whether the game's player character is presented as a man or a woman and how these characters are designed, respectively. This is also true for gameplay as an isolated category as understood by Aarseth. In sharp contrast to this, recent transformations in the marketing and monetization of games are a field in which the separation of function and representation in digital games is strongly emphasized, which inadvertently reveals the problematic dimensions of this distinction. Through the popularization of *free-to-play* games⁵ and the *games as a service* paradigm,⁶ financing and distribution models are established that aim to sell graphic or auditory modifications for player characters in free multiplayer games. Game developers defend this business model and claim that it is unproblematic because the additional modifications that can be purchased, for example *skins* for game characters,⁷ are regarded as purely "cosmetic" and thus irrelevant to the actual gameplay (Juba 2018). In other words, it is not

⁴ In feminist media criticism, Anita Sarkeesian's video essay series Tropes vs. Women in Video Games (2007-2013) should be mentioned here. For works on game gender studies see Consalvo (2003) Hot Dates and Fairy-Tale Romances: Studying Sexuality in Video Games on the relationship between representation and rule systems in THE SIMS (2000), as well as Chess (2017) Ready Player Two: Women Gamers and Designed Identity on the question of how women are produced as a target audience in the games industry and what design decisions this targeting entails.

⁵ Free-to-play games that are mostly financed through the sale of optional add-on content known as microtransactions.

⁶ Games that are designed by their developers as enduring services that are intended to integrate into the everyday lives of their players for years to come rather than offering limited experiences with a fixed conclusion, see Cai et al. 2014.

⁷ Skins are modified visual designs of game objects, usually game characters. These are placed on the 3D model of the object instead of the original texture and are thus comparable to the skin after which they are named.

possible to buy a competitive advantage in those free competitive games. Conversely, the great success of these business models shows that distinctive visual features for their characters are very important to players. Those visual distinctions can have a far-reaching impact on the culture and ultimately the gameplay of the online games in which they are distributed. This is the case, for example, when specific *skins* in a game are associated by the game's community with either very capable or particularly unpleasant players, thus eliciting corresponding behavior from fellow or opposing players (Hernandez 2019). A more fundamental argument against the idea of themability is formulated by Sebastian Möring (2013, 227-229; 253-319), in his analysis of metaphors in computer game research in which he argues that almost all games have an existential dimension that is tied to the elements of conflict and space. According to this perspective, there can be no "pure" game without a metaphorical or political dimension because these existentialisms are inherent to games; for example, a competitive game would thus always be a metaphorical negotiation of conflicts, regardless of what the "theme" of the game might be in the narrower sense. Möring's argument thus precedes the discussion on theming and concerns the ontological dimension of games. According to this, the question of theming is either posed incorrectly, or always predetermined by the game.

2. MATERIALITY

Digital games are therefore not thoroughly *themable* for numerous reasons. It makes a difference which representation is chosen for the game's rule system, and in the act of playing, the two cannot be separated, but instead influence each other and the gameplay. But under what circumstances does *themability* appear as an argument in the discourse of computer game research at the beginning of the 21st century? This question is directly related to the materiality of games, as illustrated by Aarseth's example of chess above. The scholars that advocate for positions that are subsequently termed ludological draw on analogies to "traditional" non-digital games to justify the need for a disciplinary framing of game studies,

which regards game research as a field that requires new approaches to its objects. The argument usually frames games, like chess or ball games, as millennia-old cultural techniques that were not only recently enabled by computers and that have nothing in common with literature or film.⁸ These traditional games are presented as pure systems of rules, unencumbered by narration, textuality or audiovisual traditions that can be enacted with the help of a wide variety of exchangeable game materials. It could perhaps be seen as ironic that the efforts to achieve disciplinary autonomy in game studies through reference to analogue games and their game materials or game objects implicitly raise questions which have already been discussed in pedagogy in a different context.

The common term in German pedagogy for objects that are used for play is *Spielmittel* (literally translated as “means of play”)⁹. In German-language pedagogy from the 1970s onwards, this refers to all objects or materials that enable play and games, meaning typical children's toys as well as other play materials, as Hein Retter explains:

“*Spielmittel* and toys (*Spielzeug*, F.R.) are not to be regarded as interchangeable terms, but stand in relation to each other as generic and specific terms; in addition to toys, there are a number of other objects that are significant for play actions and play-related activities; all these material means that are relevant to play are *Spielmittel* in the broadest sense.”

(Retter 1979, 207; italics in original, translated by the author)

Retter also expresses the yet to be fulfilled hope that the concept of means of play (*Spielmittel*) could serve as a cross-disciplinary foundation for all fields that are "interested in the material foundations of play[...]" (ibid., 208). Consequently, he attempts to comprehensively systemize the term and classifies means of play according to their material structure

⁸ In addition to Aarseth's chess analogy, Markku Eskelinen's polemic is a frequently quoted example, according to which one does not wait for a thrown ball to tell a story. See Eskelinen 2001.

⁹ The German term *Spiel* does not differentiate between game and play, but encompasses both terms simultaneously. This puts a larger emphasis on the context in which the term is used. I chose to translate *Spielmittel* as means of play because they are frequently regarded as at least similar to toys in the way they are affording (or demanding) play.

as well as their function, which leads Retter to distinguish between toys, games, materials of play and games (in the sense of self-produced play objects), occupational materials, equipment for play and games and vehicles (ibid., 211-212). Regardless of whether this classification makes sense or not, Retter's work demonstrates how pedagogy negotiates its questions about the materiality of play and games. Two observations should be discussed in more detail here. Firstly, regarding rule-bound forms of play, to which the (digital or analog) games of game studies probably belong, Retter argues that it must be assumed that the game determines the means of play:

“Means of play (*Spielmittel*, F.R.) for rule-based games are *strictly determined* by their play function, meaning the *Spielmittel*/means of play in question can only be meaningfully played within the context of the given material structure, which is in accordance with the given ‘rules of the game’ (the only exceptions to this rule are certain universally usable playing elements such as balls or dice).”

(ibid., 222; italics and quotation marks in original, translated by the author)

This means that in pedagogy the means of play for rule-based games cannot follow the design-principle of the greatest possible openness for various games and forms of play (ibid., 222). In other words, the design of the means of play must be subordinate to the rules of the game and cannot be handled independently. In pedagogy, too, games are at best partially *themable*, although the argument here is different from the objections raised above: According to pedagogical standards, it would be a problem to play chess with Simpsons figures, for example, since these Simpsons figures would simultaneously – through their materiality and design – invite all kinds of other play activities and thus compete with the rules of chess. It comes down to adapting the properties of play materials to fit the game's rules, whereas the argument formulated in game studies stems from a perspective that favors the rule system in a way that only becomes apparent under the conditions of digital media. In many cases, the way traditional games are viewed in game studies is thus already shaped by the computer, at least according to Aarseth and Juul). Unlike what ludologists claimed at the beginning of the 21st century, digital games are not

the most recent development in a millennia-long tradition of ludic forms, but rather these forms of play and games are strategically positioned as precursors of digital games. They are considered against the backdrop of the computer and thereby always implicitly compared to digital games.

The second observation that can be derived from the pedagogical examination of the means of play concerns the call to investigate these very objects and materialities of play. When it comes to games and play, the main interest of pedagogy is to explore the relationship between play objects and play practices as well as to find out to what extent play objects can or should be used to pursue pedagogical or didactical goals. In practice, this amounts to answering the parental question of what constitutes a good toy for one's child. In theory, however, it gives rise to a research tradition that emphasizes materials and objects over games and rules of play, as is illustrated by the discussion about military toys or toy guns, which is precisely about the effects of play materials with regard to play practices and games (what games are made possible by toy guns?) (ibid., 248-261). As early as the 1970s, pedagogy thus achieved what game studies didn't proclaim until 2012 (Apperley/Jayemane 2012), which was the *material turn*: a focus on materialities, production conditions and player practices.¹⁰

3. MATERIALITY AND DIGITALITY

In contrast to pedagogy, game studies or game research influenced by media culture studies is not interested in assessing the quality of games or proving their pedagogical value. This part of the essay will attempt to make the concept of means of play fruitful for the analysis of digital games. This means asking the question of materiality in the narrower sense, whereas Apperley and Jayemane, in their call for the *material turn*, apply a broad concept of materiality that also includes ethnographic studies of players' practices or analyses of the political economy of game la-

¹⁰ All remarks on the tradition of pedagogy are specifically concerned with the German-speaking tradition in the field.

bor. Investigating materiality in the sense that it appears both as a condition as well as a problem for the idea of *themability*, as demonstrated above, is possible in various ways, two of which will be discussed here. There is a theoretical approach that is influential in German media studies and computer game research that will be presented before being contrasted with a second concept that proposes considering the materialities of games in terms of production studies.

The materiality of digital games is identical to the computer or hardware on which they are played. This assumption informs the games research in *platform studies*, which examines the interactions of hardware and software with regard to game consoles or dedicated gaming hardware. In the first volume of the series, Ian Bogost and Nick Montfort (2009) refer to the *Atari Video Computer System* to examine the limitations of the hardware and explain how this materiality determines the software developed for the system. The *platform studies* project is implicitly situated in the tradition of McLuhan in its focus on the (technical) medium in contrast to its content, an approach that is also present in games research by German media theorists like Claus Pias (2017). This approach to the inherent duality of digital media is brought to a head by Friedrich Kittler's (2014) claim that "[t]here is no software," according to which everything that is commonly understood as software can be traced back to differences in the electric tension in computer hardware. According to this reading, the question of digital games' materiality or even of their *themability* would simply be irrelevant since games, like other software, would have to be understood as the negligible, simulated content of the technical medium of the computer.

Beyond this strongly hardware-oriented examination of the materiality of digital games, another approach will be proposed here that works with the concept of the means of play to investigate the design process of games. Materialities already inscribe themselves in the design process of games – including digital games – in a way that precedes the hardware limitations investigated by *platform studies*. In the design practice of prototyping, a preliminary, simple design of a game (or of a single system

within the game) is created and played with to test how the game or system works early on in the iterative process of game design. Jon Manker and Mattias Arvola, referring to Daniel Fällman,¹¹ talk about the prototype as the sketch of an idea:

“A fundamental characteristic of a prototype is that it is a manifestation or externalization of an idea. As such it represents something that the designer, or the design team, can reflect upon. In this reflection, the prototype is used as a sketch, which facilitates the simultaneous development of the design problem and its solution.”

(Manker/Arvola 2011, 2)

The preliminary character of a prototype as a sketch ideally requires a realization or materialization that is suitable for quick changes, modifications or interventions. Therefore, especially in early design phases, analog materials such as paper, cardboard, plastic, game pieces from other (board) games or everyday objects such as coins are frequently used to visualize game ideas.¹² This practice originates from interface design and is called *paper prototyping* (Snyder 2003). While paper prototyping for interfaces often resembles an analog game simulation in that a game master must play the role of the computer and map the appropriate outputs to the inputs of the test user in the paper system, the paper prototypes of digital games usually take the form of board games in which individual aspects of the game or its central ideas are tested. In early phases of design, paper prototyping can also be employed to test games such as *first-person shooters*, which are otherwise considered paradigmatic computer games that cannot be realized without a computer.¹³

The development of digital games thus resorts to analog means of play. This is not only true in design practice, but also when teaching game

¹¹ Fällman already uses the metaphor of sketching for the use of prototypes in the design process in a conference paper in 2003, see Fällman (2003): Design-oriented Human-Computer Interaction.

¹² An overview of some of these "actants of game design" can be found in the *Navigationen* issue on Game Laboratory Studies (Beil/Hensel 2011).

¹³ Tracy Fullerton describes the prototype of a first-person shooter, see Fullerton 2008, 181-187. Stephan Günzel (2012) argues that the first-person shooter is the paradigmatic computer game because it allows players to directly interact with an image. He therefore would not consider Fullerton's design as a first-person shooter in the narrower sense.

design, which means that the formation and circulation of formalized design knowledge, which is of increasing importance for the computer game industry, is also tied to specific materializations. The question of the materiality of digital games is directly linked to the question of the materiality of their conditions of creation. The means of play in game design are identical to those that pedagogy identifies for the analog play of children and adults, but they do not only invite us to play, but also to analytically reflect on design practices. In the process of testing through *paper prototyping*, the game is finally actually *themable*, as abstract rules are visualized in a makeshift way with materials that are on hand, cheap to buy or easy to modify. Early design stages are characterized by more abstract representation, whereas advanced and nearly completed games are implemented through increasingly concrete representations and visualizations that are no longer readily interchangeable. The means of play have to be flexible and variable for prototypes, but at the same time they also have a strong impact on the design of a game since the material is used to think about the game and modify it accordingly. It is crucial that different materials have different properties and are perceived differently by the people involved in the design process. Advocates of paper prototyping point to paper as a particularly low-threshold medium that turns game design into a more accessible experience, as it does not require familiarity with specific interfaces, tools, or programs (Medero 2007). It is also necessary to consider the material's form; for example, when playing cards are used to allow the randomization of game information.¹⁴ Paper prototypes, in the form of paper machines, can model a range of games from TETRIS (1984; see Schell 2008, 88) to SPORE (2008; see Ferrara 2012, 88-89), which means that Stephan Günzel's (2012) claim that computers are not necessary for computer games (with the exception of the first-person shooter, see footnote 12) appears to be correct, at least for the development phase of digital games.

¹⁴ Increasingly, the remediation of classic means of play such as cards or dice can be observed in digital games, see also *The History of Roguelike Deckbuilders - From Playing Cards to CCGs and Beyond - Extra Credits* (2019).

Games research asking about the materiality of its subject must therefore also deal with the design practices that are highly important in game development. The point is to take the means of play seriously as media of game design and to examine their role in the teaching of game design at universities or private colleges. Contrary to Retter's assumption it also must be clarified in which way the means of play used to represent a game's rules in the design process change those elements of the game. How do the means of play used in game design determine the game's rules? And are there variations in the prototyping process depending on whether the means of play are paper and cardboard, plasticine or playing cards or LEGO bricks?

4. CONCLUSION

Thinking about the materiality of digital games beyond the computer hardware used to play them has been a challenge for game studies for almost 20 years. The claim of *themability* demonstrates that *game studies* refers both explicitly and implicitly to analog means of play and games in order to justify disciplinary demarcation. This reference, however, considers the means of play of analog games in the context of the computer and thus enables the assumption that rule and representation in digital games can be functionally and analytically separated from each other and that representation has no influence on the gameplay. In contrast, this essay offers a point of view on digital games that explicitly considers the analog means of play that are crucially involved in the process of their design. In this sense, the materiality of digital games also includes the paper, cardboard, dice and game pieces as well as the other means used in the process of game development. The role of these materials as media of game design and as didactic tools for teaching design practice has not been considered in computer game research so far. And yet, the need to do so becomes all the greater the more game design is formalized as a discipline and a field of knowledge. The question of materiality demonstrates that doing *game studies* also implies attending to the conditions under which digital games are produced.

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