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Ludomaterialities

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An Introduction

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GAME, PLAY AND MATERIAL

This special issue of Spiel|Formen investigates the materiality of games and play from an interdisciplinary perspective.[1] It is a contribution to the growing field of *Material Game Studies* which encompasses research on themes of corporeality and materiality in relation to games.
Historically speaking, attending to the material dimension of games could only emerge as a novel research approach after the early study of digital games glossed over games' physical correlates in favor of analyzing their rules and narration. In contrast, board game researchers always had to attend to the actual *matter* of games, as Alexander de Voogt clearly states in his editorial for the first issue of Board Game Studies:

> "If we consider a context with players, boards and pieces, and rules, it appears that these elements cannot be separated for a complete understanding of a board game. The rules may influence the board and vice versa. The players may determine the shape and kind of boards and the specificity of the rules."
>
> (de Voogt 1998, 6)

It took digital games researchers quite a while longer to arrive at the same conclusions. Only after the intermediary step of theorizing games as surface phenomena of underlying code structures did going "deeper, to the metal", present itself as the logical next step, as the blurb for MIT Press's book series on the study of gaming platforms states.[2]

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1 The original German version was published as an issue of the journal Navigationen with the title Spiel|Material (GamesCoop 2020).

2 Cf. http://platformstudies.com/.

Since then, the understanding of games' material aspects has broadened considerably. In their diagnosis of a material turn in game studies, Thomas Apperley and Darshana Jayemane (2012) group the academic engagement with the topic into three sub-fields: *platform and software studies*, which examine the material foundations of digital games; the s*tudy of digital labor*; and *ethnographic explorations of game situations and cultures in their materiality*. These three fields, however, do not perceive themselves as being part of the same paradigm. Miguel Sicart (2014) calls on designers in particular to focus on the materiality of play. In doing so, he argues for a play-centered perspective that corresponds to the project of *Play and Game Studies* centered around the research group GamesCoop in Siegen, Germany. Both approaches advocate for expanding the notion of game studies to include a whole gamut of playful phenomena not based on rules. Despite the importance of his message, Sicart's call to pay attention to the materiality of playful phenomena remains vague and does not address how this could be achieved. It comes as no surprise, then, that the relevant efforts are few and far between and do not follow a unified systematic approach to the matter. Following the German release of *Spiel|Material* (2020) that this reworked and expanded issue is based on, Beil et al.'s (2022) edited volume *Playful Materialities* took up the baton,[3] highlighting forms of entanglement between game culture and material culture that range from chainsaw-shaped game controllers to playable museum experiences, and Lego-based hybrid games. Nevertheless, there is still a need to expand the theoretical groundwork for reflecting on ludic materiality and to develop and refine the methods for exploring it. The present volume represents a further step in this direction. Its aim is to examine the relationship between play and materiality in its manifold facets, the underlying premise of all texts in the volume being that 'playing' usually means 'playing with material objects' of some kind.

From a game-making perspective, the design of playful activities is typically linked to the design of game materials. Conversely, games themselves can generate an output of material products – think, for example,

[3] Quite literally so, as Hanns Christian Schmidt, who also contributed to *Spiel|Material*, went on to edit the *Playful Materialities* volume.

of the Surrealists' attempts to translate processes of the subconscious into art via the practice of play. However, neither game materials nor products of playful action necessarily have to be present as physical objects. The computer game MINECRAFT (2009), for example, is centered around moving and creatively arranging digital building blocks. It thus vividly demonstrates that games are performative and consist of practices that can be thought of as fundamentally material, that is, as movements of bodies.[4] Building on this, Pablo Abend and Max Kanderske's paper examines Quantified Gaming, self-tracking and how individual actions and operations occur within and are enabled by material arrangements. These arrangements can transform into practices and those in turn are stabilized to become part of the larger framework of gaming culture. This is complemented by Felix Raczkowski's analysis of Theming and Materiality in which he examines how the game design process is profoundly informed by different materials. By looking at the relationship of game design and materials employed in the making of games, Raczkowski challenges the generalization that games can adopt any theme without impacting their core gameplay, by analyzing the presumed disconnect of theme and game design materiality.

Across cultures and geographical boundaries, materials that are part of an aesthetic of play typically have in common that they are constitutively ambivalent. They are both malleable and stable: the sand of the sandbox, the building block, wood, as well as plastic, the material that allows for an unparalleled variety in shape and color. Crucial to the brief history of game studies are the simulated, virtual materials of digital games, which exhibit practically unlimited malleability. During the discipline's infancy, which has been shaped by literary studies, digital games were still discussed as spaces of immaterialization, but at the same time always with recourse to material metaphors and spatial narratives, such as amusement park attractions. Looking at the ontogenetic qualities of light in games, Arvid Kammler's contribution examines the superimposition of light spaces on the threshold of the display in the form of emitting and reflecting light and

4 The material character of practices is also emphasized in practice theory. See Reckwitz 2003 and Schatzki 2006.

the materialities of light encountered by players. Materializing as a representation of sand, water and spaceship corridors, Kammler shows how light, understood as the basic building material of games, appears only as a reference to other artifacts.

In recent years, however, the material and the body have come to the fore as central categories when engaging with digital games. Today's users of digital games do not disappear into virtual worlds composed of frictionless and freely constructed spaces. On the contrary, at the very moment when the discourse on cyberspace expected the detachment from physical space, materiality returned in force. After all, tremendous efforts must be expended to maintain virtual spaces. The digital worlds of light and memory states require rare earths, which are wrested from the ground through human labor, as well as electrical energy, which often means burning fossil fuels like coal and natural gas.[5] In the early nineties, Friedrich Kittler titled his famous essay *There Is No Software* (1992). Today, in light of the ongoing semiconductor shortage, his aphorism intended to foreground the material foundations of all computing seems to carry a threatening undertone.

In addition to this material side of the digital, it is becoming increasingly clear that analog parts of gaming practice are by no means disappearing. The hard core of today's *gamers* are those who identify strongly with their hobby and are competitive and technologically interested. Far from disregarding the materialities of gaming, these players ostentatiously display their affinity towards gaming culture through specialized hardware. Not only is this hardware materially conspicuous with colored lighting and an expansive design; gaming chairs, gaming mice and gaming keyboards are also characterized by being designed with the corporeality of the user in mind, i.e., to reduce the negative consequences of a largely motionless, sometimes unhealthy activity. The keys are spring-loaded, and the chairs are cushioned for comfort. Gaming thus also feels good

5 "Dross of the Digital" (Schlacken des Digitalen) is the poetic title of an undergraduate seminar offered by Thomas Hensel in Siegen in 2008 that captures this dimension of the digital.

physically, while it becomes a form of luxury on display.[6] Combining the analog game board, the digital playground and cinematic playfulness, Andreas Rauscher develops the concept of mise-en-game as an expanded view on the history of cinema with a focus on transmedial perspectives. Rauscher explores arcade games, material adaptation of board games, and hybrid world projections of role-playing systems as environments for the materialization of this mise-en-game.

Through online communities, board miniatures and card games are also experiencing something of a renaissance, with communities of enthusiasts sharing recommendations and knowledge. In the same vein, analog game companies use crowdfunding to create the financial basis for the production of games. Long before their eventual release, these proposed concepts of game rules and aesthetics have to attract enthusiasts who place their trust – and money – with them. Here, materiality gains importance as an attraction: high-quality prints, wooden figures and plastic injection molding compete for the favor of potential customers. Board game studies, like the fledgling analog game studies journal, explore such phenomena, with most work consisting of material analyses.[7] These approaches are heavily archaeologically and ethnographically influenced – if they are not part of these disciplines anyway. In this sense, Claudius Clüver investigates the affordances of game/play objects such as dice, cards, and boards. By examining how the sometimes very different material elements of games relate to each other as game forms, Clüver develops the notion of play-form as a taxonomy to further analyze the composite character of games and their object-affordances.

MATERIAL, BODY AND WORK

Over the last two decades, the material of the digital has gained significance in the realm of hardware and interface development, especially through the intertwining of actions in physical and digital space. In the

6 Cf. the communities: reddit.com/r/battlestations and reddit.com/r/mechanicalkeyboards.

7 Cf. http://analoggamestudies.org/.

2000s, for example, users of *Nintendo Wii* and *Microsoft Kinect* began to control simulated game objects with their body movements; over the following decade, touchscreens and the adherent finger movements of scrolling, swiping, etc. became the dominant mode of interaction in the field of mobile (game) media. This intervention of the player's body in simulated spaces already anticipated the renewed enthusiasm for AR and VR technologies in the 2010s and added the crucial category of gesture to the repertoire of forms of digital gaming practice (Apperley 2013).

Bodily interactions with virtual spaces require materially present sensing devices and an extension of digital measurement into the physical environment of the users. Consequently, the goal of creating the illusion of a deceptively real artificial world without material limitations requires technologies that are all the more integrated into the physical environment. VR and AR interfaces, for example, must locate themselves in relation to the space in which they are to be played. Inertia sensors and object recognition algorithms are among the tools that make the material environment tangible in machinic terms and facilitate a relatively well-functioning immersion in the simulated world. Here, the dialectic character of virtuality becomes obvious. The connection between player and environment is not severed – as is often feared in terms of cultural pessimism[8] – but rather technologically intensified, becoming more complex, multilayered, and aesthetically richer in the process. The field of Game Studies is thus faced with the task of taking this enrichment into account theoretically and methodologically. In this context, the expansion of corporeality through new connections and layers is not a new idea. Donna Haraway's (1985) *cyborg* is already a decidedly corporeal-material hybrid between human, animal, and machine. In Félix Guattari's (2019) ecology, connections in the material environment are equally crucial for a similarly rooted perspective on the individual, society, and nature.

8 This idea can be traced in both the discourse about computer games and the danger of escapism, as well as in the technical-utopian concepts of immersion - in which the (supposed) merging of bodies with technology / virtual worlds is accompanied by a turning away from the 'real' world and its environments. For a critical reading on the concept and history of Immersion, see: Belisle 2016.

Digital enrichment is not limited to private spaces. Since the triumph of handheld consoles, games have accompanied and accelerated the development and dissemination of mobile media that can be used virtually anywhere – from the *Nintendo Game Boy* to the App Store. Finally, with the emergence of the practice of digital treasure hunting known as geocaching, locative media have also been adopted for gaming purposes in public spaces.

Various terms have been used to describe such games: *location-based games* refer to games in which the location serves a special function within the game's context; *ubiquitous gaming* emphasizes that the act of playing can happen everywhere; *urban games*, finally, are those games whose practices relate to urban spaces to a particular degree. An inventory relevant to this has appeared in the special issue *Playin' the City 2016* (Ackermann/Rauscher/Stein 2016) of the journal *Navigationen*. As if to confirm the relevance of the topic, the same year saw the release of the highly successful Android and iOS augmented reality game POKÉMON GO (2016), which both spiritually succeeded and commercially exploited many of the ideas pioneered by earlier, more experimental *urban games*.

Traversing a space, acknowledging one's own physicality as well as the materiality of the input interfaces, and empathizing with the simulated materialities are thus important aspects of the reception of digital games. Accordingly, computer game studies are increasingly focusing on the materiality of ludic experiences. In 2009, the cover of *Navigationen* issue *It's all in the Game* (Beil et al. 2009) already featured a skyline of urban high-rises in all their aesthetic-material impregnability that could be felt even through a game screenshot. In addition to the aesthetic corporeality of digital materials as well as the corporeality of perception (aisthesis), the materiality of the interface and its conditions have recently come to the fore. Interface studies investigates how forms of control emerge and are enculturated. Thus, the focus is less on the individual games and more on the material conditions of playing itself.

Timo Schemer-Reinhard's contribution sheds light on the social practice of sharing that, in the case of the *PlayStation 4*'s DualShock 4 controller, has been embodied in a single button. Schemer-Reinhard analyzes

the enculturation and conciseness of the button press to show how the practice of sharing has changed in the milieu of digital media and games. This approach is closely aligned with the ideas forwarded by *Platform Studies* scholars. Their approach towards studying games centers around the question of how concrete hardware and software platforms shape the games developed for them, or what mutual relationships exist between game and hardware design (Bogost/Montfort 2009). At the same time, distribution platforms, social networks, and streaming providers are also becoming possible research interests, as they contribute decisively to the genesis and evolution of game and game-related practices, raising questions of economic and social control.

Developing computer games means working *on* material things (both physical and digital) and *making use of* material things in the form of tools and devices. It is also material in the sense that it requires the physical exertion of human bodies. The various physical qualities of game design work were analyzed in the *Navigationen* issue *Game Laboratory Studies* (Beil/Hensel 2015) through the lens of actor-network theory. Here, the question at the outset was what objects, structures, or elements are used in the making of digital games and how they relate to one another. The result is a kaleidoscopic analysis of creative work in game studios. The present issue expands this field of investigation by looking not only at professional game studios, but also at other – historical and current – sites of creative game making. By means of Lyonel Feininger's *Block-Eisenbahn* (block train) Ina Scheffler exemplifies how toys served to illustrate experiences of material and color in the context of the Bauhaus. Since models highlight various features of a represented object while simultaneously being not an exact reproduction, toys can function as a starting point for didactic and educational purposes. Hanns Christian Schmidt connects the Bauhaus to NINTENDO LABO by exploring the Bauhaus' material studies courses as fields of experimentation and relating them to composite media experiments like NINTENDO LABO. NINTENDO LABO, Schmidt argues, allows players to assemble the game console in interesting new ways using

cardboard, demonstrating new pedagogical approaches, the simplification of artistic material, and the constructiveness of playful and experimental modes of exploration.

Players are central to the genesis of the medium of computer games in two respects: on the one hand, they participate performatively in the creation of play through their game actions; on the other hand, they are directly involved in the shaping of the computer game landscape as producers of communities of practice, game-related content, and data material that enters the development process. Work is always material in that it implies human activity, which can only be kept available through the sustenance of living bodies via housing, food, and other forms of bodily care.[9] Creative practices such as *modding*, *machinima*, *Let's Plays*, *streaming* as well as various aspects of fanhood such as *cosplay* (costuming), *fanfiction* (creative writing), blogging and vlogging (reporting) or organizing gatherings are active, motivated participation in the culture of game making that usually also produces material output. The line between *playing games* and *making games* is thus increasingly blurred – not least by the genre of *editor games* (such as Minecraft) and easy-to-use game creation tools. The systemically ubiquitous but usually uncompensated work of game fans is reflected in concepts such as Kücklich's (2005) *Precarious Playbour* and Abend et al.'s (2019) concept of *Laborious Play* and *Playful Work*. Finja Walsdorff's contribution analyzes the status of work involved in creating game modifications as well as the means modders use to make financial gains from their work. While modding began as a form of unpaid labor by fans, today increasingly professionalized forms of work can be observed in modding projects, as Walsdorff argues based on extensive interviews with modders of *Bethesda Softworks* games. Tim Glaser's article offers a different angle on the same set of issues of fan labor and commercialization in the form of weapon skins in COUNTER-STRIKE: GLOBAL

9 In a call to investigate the economy of games, Rolf F. Nohr (2008) conceives the game-economy explicitly immaterial, primarily connecting it to attention. An economy of games, however, is always to be understood as material as well, for the reasons mentioned.

OFFENSIVE (2012). Looking at these weapon skins and their entanglement in processes of production, distribution and commercialization, Glaser raises the question of the extent to which randomized reward mechanisms can be thought of as a platformization of gaming culture.

As the contributions outlined above demonstrate, ludomaterialities, emerge in a wide variety of contexts and roles: from design processes, industry and fan productions to the platformized distribution and sharing of game content, as an interface element to enable practices of sharing and self-measurement, or as a game tool applicable to art and media education.

We are ending this introduction with a word on behalf of the journal: Starting with the current issue, Spiel|Formen will introduce a recurring op-ed written by changing members of our editorial board. This new format is aimed at providing a space for timely commentary and critique of current developments both in the academic field of game studies and in the wider field of games, game production and play. The first op-ed, co-authored by Claudius Clüver and Max Kanderske, provides a scathing critique of so-called crypto gaming by attending to the historic developments leading up to the "pay2earn" monetarization model and analyzing its devastating economic and ecological consequences.

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GAMES

COUNTER-STRIKE: GLOBAL OFFENSIVE (2012), Valve / Hidden Path Entertainment.

MINECRAFT (2009), Mojang Studios, Xbox Game Studios, among others / Mojang Studios, Microsoft Studios, among others.

POKÉMON GO (2016), Niantic / The Pokémon Company, Nintendo.

PAPER AND POLYGON.

Theming and Materiality in Game Studies and Game Design

Felix Raczkowski

ABSTRACT:

This contribution to the research on games and materiality has two goals. One 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 game[1] 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 emphasized[2] 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* games[5]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 Fullterton 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 pedadogy 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 remediatisation 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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DICE, CARDS AND BOARDS

Material Elements of Games and the Play-Form

Claudius Clüver

ABSTRACT

The study of dice games, card games and board games shows that similar material objects as well as the specific moments of attraction attached to them evoke similar games. These objects therefore have the affordance to play those games with them. Dice, for example, lend themselves to games with a component of randomness; Card games have historically undergone a change from luck-based to skill-based games, while the mathematical principles underlying them are developed; Boards invite competition for the space on their geometric surfaces. On the basis of these findings, I propose the notion of a play-form for these object-affordances, which are characterized by being stable, recognizable and functionally related to the game context. In addition to these object-like forms of play, practices such as gestures or infrastructures related to games can also have a formal character. If several forms of play come together and the combination in turn has formal qualities, meaning the combination is also stable, recognizable and functional, I speak of game formats, such as board or card games, that draw on a common inventory of forms. In more modern games it is common to use the entire range of play-forms, whereas stronger format delineations are characteristic of traditional games.

Keywords: analog games, board games, card games, dice, affordance

1. TRADITIONAL GAMES

It is not surprising to find dice, cards and a board inside the box when opening a tabletop game. Well-known examples of this are MONOPOLY, TRIVIAL PURSUIT, THE SETTLERS OF CATAN, which are games that are among the most popular today. Players of these modern games are used to typical game elements such as dice, cards or boards that are re-combined again and again in new games. This is a historically new and unique phenomenon. Outside the current industrialized situation, it is typical to know only a few games: historically, there are usually about a dozen games or less in a given culture. H.J.R. Murray (1978, 227 f.)[1] estimates that there are between 50 and 60 board games worldwide. There are groups of games that share similar characteristics, such as dice games, card games and board games. These dominant formats of regulated games are conspicuously named after the game materials used: Dice, cards and boards. These material objects thus seem to play a dominant role in the perception of the games in which they are used.[2]

In the following, I will examine what function these objects have in the games. On the basis of this examination, I develop the concept of play-form, which includes the materiality of game elements as well as their function and use in game practices. I then propose an interpretation that connects the play-form with gameplay principles. This analysis may serve as a tentative explanation for why, according to the perception of players, such objects characterize the games in which they are used.[3] For example, dice games are organized around chance, card games tend to be organized around combinations, and board games are organized around spatial conflicts. The objects help to shape the gameplay principle and vice

1 According to Murray, there are about 270 board games. David Parlett (1990) lists 500-1000 card games, but he lists game variants as separate entries. Card games are characterized by the fact that traditional packs of cards can be used for different games. This characteristic is reflected in a greater variance and dynamism compared to board games.

2 This also applies to languages other than English.

3 These principles correspond with Roger Caillois' ''attitudes of the player.'' (Caillois: Man, Play and Games, 2001, 11 ff.)

versa. Groups of games increasingly distinguish themselves from one another by bringing the central attraction of their respective basic principle to the fore more and more concisely. The spectrum of historical games thus allows ideal-typical types of games to come into focus, which converge around their central moment of attraction like a gravitational center: in the example of the dice game, it converges around chance.

Well-known games fall into the categories highlighted here in a surprisingly clear manner. Although some games fall outside these three categories, even these games form clearly delineated groups, so that the set of all games does not have a random structure. Even across cultural boundaries, regulated games often seem to offer players the same challenges. The few games that have been present in known history are also often known in multiple world regions and across cultural boundaries, (Crist/de Voogt/Dunn-Vaturi 2016, 181) for example, games of the BACKGAMMON group and CHECKERS. They typically vary locally, from place to place. (Parlett 1990, 49) However, the differences in the games from one cultural area to another are rarely greater than the local ones. This suggests conclusions that are surprising for scholars of cultural studies: It seems that practices of play unfold in part below the threshold of culturality. The practices of play are part of culture, but they also protrude from it, as it were: We might imagine play practices as a mangrove tree, itself being a dynamic, alive entity, only part of which is visible above the water's surface, partly in water (or culture) partly outside. Grounded in mud, rising through the water into open air. In other words, U.S.-Americans from the 1930s, citizens of ancient Rome and individuals from various peoples in pre-Columbian Mesoamerica seem to have something in common, for dice games are popular in all of these cultures. Murray explains that about half of the board games he discusses are played by only one people. Usually these are games with simple rules. It is therefore the complex games that seem to spread. (Murray 1978, 228)

The relative cultural independence of regulated games challenges fundamental questions in cultural studies. The extent to which phenomena are shaped by the culture in which they appear is one of the central questions of cultural studies. With structuralism, constructivism and post-

structuralism, some of the most important philosophical movements of the last decades tend to assume a largely culture-relative constitution of reality. Against the backdrop of the astonishing results of ethnographic research that inform these movements, it is difficult to identify any phenomena at all that are not already shaped by culture and language. This makes it fascinating to the point of surprising that, firstly, regulated games occur, and have very similar characteristics, in almost all known cultures; and secondly, that individual regulated games are able to spread very easily from one culture to another without changing fundamentally.[4] Moreover, in most cases, regulated games are not associated with cultural symbolism, and if they are, the rules hardly change as a result. This does not mean that games always remain culturally inconsequential – the culture of playing and talking about games can provide strong impulses in a culture, for example, in the academic reflection on the game sphere in modern times. (Clüver 2021) However, the materiality and structure of a game have only a minor influence on what meaning a game has in one culture or the other. Rather, games acquire meanings that are applied to them from the outside: The pedagogy and philosophy of modern Europe in particular repeatedly refer to play as an example and a field of action. (Ibid.)

Thus, while cross-culturally recurring and stable elements in regulated games (in order of appearance: dice, cards and boards) are the object of this text, this stability is conceived on the basis of an encompassing cultural relativity.

2. DICE

Even outside of games, objects in the shape of a cube have the ability to fascinate. As an example, consider the shape of a common, six-sided dice.[5] First, this shape is such that an observer can only see three sides at

4 They have this in common with another field dominated by form(ula)s: technology. Similarly, mathematical concepts move quite easily across cultural boundaries, such as the idea of "zero."

5 There have been multiple forms of dice: globally and historically, animal bones or shells are often thrown, the irregularities of which are compensated for by throwing several and adding up the results. The same is possible with coins. Rolling dice is

a time. That only three sides are visible becomes even more striking when they are marked differently from one another – which is the case with a game cube. An observer will most likely start to turn the cube in their hands to look at the different sides. If the cube is made of transparent material, the three more distant sides can also be seen, but this makes the play of show and hide even more complex, which can also encourage curiosity. A cube can thus demonstrate the phenomenological concept of "adumbration" (German: Abschattung) – the fact that even though we assume we can see whole objects, we are only able to perceive certain parts of it at one time. (Husserl 2007, 55 ff.) We don't need to assume that this is reflected upon consciously in order to recognize it. Historically, astragals (see Fig. 1), the ankle bones of cloven-hoofed animals, are most frequently used as dice. Their irregular shape emphasizes adumbration in a similar way to markings.

Fig. 1: Historical dice: animal ankle bones. (Used under CC-BY-SA 3.0, Wikimedia Commons User Hanay)

also common. Industrially, any geometric body can be produced with high precision and in large quantities, so that besides the common six-sided dice, dice with four, eight, ten, twelve and twenty sides are also available. Furthermore, dice with special markings are available for certain games, for example, a six-sided one that bears the numbers from one to three twice, or a ten-sided one that bears the numbers 00-90 in steps of ten, so that together with a ten-sided one it produces a random number between 1 and 100.

In addition, the cube can be thrown, after which it usually stays on one side and another remains facing upwards. It is nearly impossible to predict which side this will be. With markings on the sides, a cube is known to be suitable as a random generator in this way. This property of the dice has been historically used in ritual contexts, but especially in the field of regulated games.

Fig. 2: Dice as a symbol of uncertainty and danger in the military. (Public domain)

Dice are accordingly common as a symbol for regulated games, on the one hand, and for chance (or for fate), on the other hand (see Fig. 2). In historical dice games, chance is of crucial importance. A number of experiments have shown[6] that people are bad at estimating random events, which regularly leads to surprises in dice games. Players often think that

6 For example, the gambler's fallacy or the discourse around the Monty Hall problem.

fate is at work in these games, and it is not uncommon for dice game players to have superstitious beliefs or display superstitious behavior. The fact that an object behaves differently than expected, that it *surprises*, makes it interesting – the dice take on life-like characteristics. In addition, there is a delay that follows the throw of the dice before they come to rest. After that, the player still has to recognize, count, or calculate (in the case of several dice) the value of the throw. To add to the surprise, there is a moment of tension that can be further extended by dice cups, for example. Thus, dice are attractive because of their material, external nature and their interaction with human perception and reflection.[7]

The attractiveness of the dice is further enhanced by a material stake in gambling, typically a money wager. Most historical dice games have few more elements than this. This game configuration is entertaining enough to serve as a past-time on a historically widespread scale. Most dice games in history have been games of chance that make use of little more than the dice themselves. In addition, there are games that are played with dice and boards. Since this section of the text is not organized by game formats[8] but by game materials, these games are discussed here instead of in a separate section. Moreover, the following will show that they correspond more with the ideal type of dice game than with the board game, which is why they are not classified there.

The dice game with a board is a very old combinatory format. The oldest known board games fall into this category: the Babylonian GAME OF UR as well as the ancient Egyptian SENET. (Dunn-Vaturi 2007) BACKGAMMON, whose precursors go back to at least the ancient Roman DUODECIM SCRIPTA, belongs to this group of dice game. (Donovan 2017, 34 ff.; Schädler 2007) Then there is the Indian PACHISI, on which today's popular games LUDO (in the United States, England, and many European coun-

7 Julius Caesar refers to this moment in his quote "alea iacta est," which is often quoted to the point of cliché. The fitting English translation reads "the die is cast." The metaphor thus describes a period of time in which a decisive process has been set in motion, but in which there is no possibility of intervention. This quote stems from a situation in the civil war in which Caesar's troops are on the move.

8 For clarification of this term, see below.

tries), MENSCH ÄRGERE DICH NICHT (in Germany) and EILE MIT WEILE (in Austria) are based. (Finkel 2007) PACHISI is not traditionally played on boards, but on textile game mats. In addition, there is the GAME OF GOOSE, a spiral race to the middle that is particularly popular in the 17th century (as a gambling game). (Donovan 2017, 37; Lhôte 2007) What these games have in common is that the result of the dice is translated into progress along a path. This type of game is therefore often referred to as race games.[9] The direction of movement cannot be changed and there is no second dimension: the path is a line of positions. Sometimes this path is followed in several directions, for example in BACKGAMMON by the two players in opposite directions. There is only movement in more than two directions in games that have been released since the 19th century. (Whitehill 2007; Whitehill 2015; Donovan 2017, 52ff.) The progress on the board records the score, on the one hand, and a material form to the score, on the other, which then enables the addition of further rules (e.g., beating the opponent's pieces in LUDO).

The dice racing game adds another aspect to the excitement of the dice game, forming an early and stable hybrid form. Beginning in the 18th century, a large number of thematic dice racing games appeared, often with a travel themed design. The rules of the individual games vary only slightly – the simplest variations are just the GAME OF GOOSE with a new design and a new metaphor. This family of games is an intermediate step on the way to modern board games, whose examples are designed and themed. In its early combination of dice and board, this type of game serves as a precursor to the many modern hybridizations. (Lhôte 2007, 115; Lhôte 2010, 82 f.; Schädler 2010; Whitehill 2007, 163)

In summary, this means that the ideal type of dice game is one that focuses on the moment of tension during the dice roll. Thus, it does not need to involve much more than one or more dice. It is either based on pure chance (in the case of cubic dice) or involves an aspect of skill (in the case of knucklebones: Because these are irregularly shaped, players can

9 This term can be found in 20th century games literature, primarily in British games literature. Thus, I cannot say at this point when these kinds of dice games are interpretatively associated with races.

influence the outcome to a certain extent through choice of bone and through dexterity in the throw). This aspect is usually enhanced by money stakes or scoring systems (e.g., point counting, or the scorecard in YAHTZEE) to give greater meaning to the results of the throws by establishing and maintaining continuity between them.

These stakes and scoring systems are replaced in the dice racing games by movement along a path, which creates a second but related ideal form. The course that the players have to follow can be spiral, crossed or line- shaped. Other game mechanics can be in effect on the course, in particular beating or capturing when one's own piece reaches a square that is already occupied, as well as special squares that move the pieces further or back or protect them from being beaten.

3. PLAYING CARDS

Early card games are primarily games of chance and, in general, are thus functionally interchangeable with dice games. In religious and bourgeois circles in particular, however, gambling is already suspect in the Middle Ages. The reasoning is that the fruits of honest labor could be lost in gambling, on the one hand, and winnings could be obtained without honest labor, on the other. Over the course of modern times, bourgeois players increasingly play more tactically, for example by memorizing the cards they have already played or by observing the reactions of the other players. This way of playing develops in distinction to the nobilities' generous and exuberant way of playing and in reaction to the unpredictable and immoral aspects of gambling. (Depaulis 2010, 155 ff.; Wörner 2010, 432) Thus, as the bourgeoisie becomes culturally dominant, a cultural space of play emerges that is then filled by games that reward the skills of the players more. This happens in several stages, from betting games that no longer exist, such as PHARAOH and LANDSKNECHT, which dominate until about 1600, through the 17th century with REVERSIS, HOMBRE and WHIST and the first game books (containing rules as well as tactical advice), before the wave of transformation breaks in 19th century card games like SKAT or POKER. The skill-based games that emerge from the 17th century

onwards are to some extent still common today, in contrast to the games of chance of the earlier period, which have disappeared from gaming (and gambling) practice.

Card games are practically always based on the fact that the front side is hidden, while their back side faces the other players. (Parlett 1990, 15 ff.) This applies to both games of chance and games of skill. The more central the skills of the players are, the more crucial it is to treat the game as a system of known and unknown information,[10] the unknown part of which can be utilized by reflecting probabilities in the game. This understanding of the situation as an informational one is modern – in cultures with a less scientific-empirical-materialistic self-conception, players tend to conceive of the course of the game in terms of *fate* rather than analyzing the mechanics that are immanently effective in the moment-to-moment development of gameplay. The critical material difference to dice games is the more complex structure of the card deck: Unlike dice, the outcome of a game action (such as drawing a card) influences the probabilities of all subsequent outcomes. For example, if a jack is drawn from the deck, the probability of drawing a jack again the next time decreases, because there are now a maximum of three jacks in the deck.

The front of the playing card, the card face, is marked with symbols indicating groups (the colors) and a hierarchy (the values). The resulting order offers the possibility of hierarchical valuation, which is relevant in many games. In addition to scoring, the two-part order opens up the possibility of combining and recombining cards, as in *Poker*. In many cases, the hierarchy has also been interpreted socio-culturally, especially because a royal "court" is represented.

It follows that the ideal-typical card game is one in which the players only gradually learn which card is in which place in the game, while they have to bring about a certain configuration of the cards or guess something about the configuration correctly.

10 In economics these are called games with imperfect information as opposed to games with perfect information, such as most dice games.

4. BOARD GAMES

From the perspective adopted here, which is concerned with ideal types, a two-dimensional grid appears to be the typical form of board game. In addition, there are many different types of boards: POCH boards, MANCALA boards, boards with squares arranged in a spiral or cross-shape, BACKGAMMON boards. Some of these boards are used in games that have already been described here: POCH boards are necessary for the card game POCH, and the dice racing games have been treated above with the dice games. In both POCH and the dice-racing games, for the most part the decisive game actions do not take place on the board: The POCH board is used to manage the game stakes, the boards of the dice racing games are means of documenting the score produced by the throw of the dice. We can consider POCH as more of a card game than a board game, the dice racing games more as a dice game than a board game. The dice racing games are also an exception in the set of board games because of their linear game plans. A second exception are MANCALA games, which form one or more paths out of a series of small pits. Tokens (often pebbles or beans) are counted into or out of these pits. They are closer to dice racing games in their low spatial complexity.

The largest group of board games, however, are those on playing fields that consist of a grid, a typical example being the CHECKERS game or the Japanese GO. The best-known example is probably the chess board, which measures 8 by 8 square squares. As a rule, the pieces are abstract, which makes CHESS, which is popular in historical studies on games, rather atypical. (Murray 1978, 7) Boards with grids that are not continuous can also be found in the GAME OF FOX, SIEGE and NINE MEN'S MORRIS (MÜHLE in German), for example.

The majority of historical board games, however, are characterized by a spatial conflict around a two-dimensional grid. Materials here are the gridded playing field and figures. The playing field of a board game does not have to be a flat board made of wood or cardboard. For example, the large group of MANCALA games is usually played in small pits that are dug into the sand by hand. (Murray 1978, 159 f.) Wooden boards with pits cut

into them are also common. The playing field is sometimes drawn in the sand, carved in or painted on wood, they are more rarely carved in stone. It is only with industrialization that cardboard replaced these materials on a large scale. The game pieces are often small objects that are readily available in large numbers – pebbles, beans or grains, shells or bones, for example. In most cases, neither the board nor the game pieces are decorated or figuratively designed – the typical board game is abstract and geometric. Due to this abstractness, the material of the game elements is also of secondary importance for the course of gameplay. CHESS is the exception in that it uses somewhat figurative pieces, which may explain its extraordinary popularity in modern humanities research. The figurative aspect of CHESS made it possible for it to become one of the roots of simulation thought. (Nohr 2008, 19 ff.) A vague, symbolic resemblance of the geometric contests of board games to conflicts like war, battle or hunting is, however, noted at least in the medieval names of some board games: THE HARE GAME, FOX AND GOOSE, THE SIEGE GAME, LUDUS REBELLIONIS. (Murray 1978, 98 ff.)

The mathematical character of board games is reflected in the fact that board games appear again and again as an experimental space or example in the history of mathematical thinking. Mathematics, being the reflection of abstract structures, thus uses the board game, which then appears as an abstract structure for the sake of an abstract structure in this context.

The central challenge in board games is a direct competition for control of geometric space. Here, a competition of skill can be held, and thus self-efficacy can be experienced if spatial control is successfully gained. The structural, geometric abstractness of the game means that the players perceive the challenge as primarily abstract and intellectual. It gives tactical reflection an immediate, material counterpart on the board, which creates the subjective impression of thoughts becoming material. The spatial-geometric situation of the game state changes with each move and creates new tactical relationships between the game elements. These relationships are not random like the results of the role of dice, but they are shaped by the unexpected course of interpersonal interaction, which

makes them just as surprising as the fall of the dice. This interconnection of the intellectual-tactical and the material-geometric dimensions of the game is the attraction of the board game.

Accordingly, the ideal-typical board game is played on an abstract, two-dimensional grid on which two players or two groups of players compete against each other. In this competition, they are either allowed to place pieces on certain positions on the grid or to move pieces that are already there to other positions. If movement is possible, then in most cases it is in four or eight directions (sometimes more complex patterns as in CHESS), not just on one line. In most cases, certain moves can remove opposing pieces from the field or "capture" them. The aim of the game is to be the first to bring about a certain position of the pieces on the field, to remove all the pieces of the opponent from the field, to capture more pieces than the opponent or to have more on the field or, as in GO, to enclose a larger part of the field with one's own pieces and thus "conquer" it.

5. PLAY-FORMS

An analytical method for systematizing game elements can be gained from reflecting on the game materials described. As can be seen here, there are certain objects that are played with again and again in very different cultural contexts. (Adamowsky 2014, 350 f.; The example mentioned there is the *ball*.) They enter into a cross-culturally distributed relationship with the perception and practices of very different people, a relationship that is pleasurable for the players. These relationships can be described with the concept of affordance. This term is used to talk about the "offer character" that objects emanate to living beings of a certain bodily structure – a chair has the affordance for people of a certain size to *sit down*. (Gibson 1986, 127 ff., esp. 133 ff.; Abend/Beil 2014, 52) This term is coined by James J. Gibson in the psychology of perception and widely received in the field of design. The term is useful here in that it does not enforce a subject-object dichotomy; affordance is a relationship that includes both parts of the object and parts of the person perceiving the object. James J. Gibson, who coined the term, accordingly embeds it in an

"ecological psychology of perception." (Gilli 2020; translation by the author) The boundaries of affordance lie inside and around (and not between) the object and the subject, which in turn are poles within the material relationship. In this context, subject, object and affordance are produced in processes. More precisely, then, affordance is a relationship within the material world that appears offer-like to a perceiving being. For Gibson, affordance is conceived around the single individual[11], which needs to be extended to include social and cultural aspects (Zillien 2008, 12 ff.; Gibson 1986, 135 f.) – in the case here, for instance, the objects described above are not naturally found, but man-made (or, in the case of astragals, found and *chosen*). Also, their use is shaped by rules of the game, meaning by cultural conventions.

The practices related to the game objects are embedded in rule systems of finite complexity that grow out of the affordances. The practices are thus not limited to the mere handling of a play object, as is the case with some *toys*. Both the practices and the objects evolve slowly, they are relatively stable. Play objects such as dice and cards are thus recognizable things that are furthermore associated with relatively stable practices: They are associated with their functional use in specific games. For this function-object structure, I propose the term *play-form,* or *Spielform*[12] in German.[13] It expresses the two aspects described: *Form* stands for the stability and recognizability of the element, *play* for the functional context.[14]

11 Universalising and naturalising a modern individualism.

12 Since Spiel is the German word both for play and for game, this term is very general and bears a deliberate ambiguity that has to be abandoned in the translation to English.

13 As a concept, play-form is similar to the design pattern, which, however, implies that it only applies to designed games. (Juul 2016) Similarly, it is related to ludeme, which, however, only refers to abstract game elements that are found in the rules and appear in this text as "function." (Bojin 2010; Parlett 2020)

14 "Form" also has connotations of functionality, at least in German, where "form" also means "mold," as in "baking mold" or "casting mold." In addition to the development of this term from the historical material, the concept of form is borrowed here from its use in Gestalt theory or Gestalt psychology. (Wertheimer 1923; Arnheim 2000, 93 ff., p. 305ff.) The concept of form has been applied to media theory by Rainer Leschke, who emphasizes the relevance of morphology for the explanation of transmedial phenomena, especially in the field of networked media. (Leschke 2010) From today's perspective, memes, for example, could be analyzed as a form phenomenon. (Leschke 2010; 17 ff.) Media morphology used the term

In this text, the object-like play-forms *dice*, *playing card* and *game board* are discussed above. This term, however, is not to be limited to objects. Gestures can also be stable, recognizable and functionally related to the game, as in ROCK-PAPER-SCISSORS; movement sequences such as the *overhead kick* in FOOTBALL or even tactics such as chess openings. chess openings are stable and recognizable enough that they have been given names. Moreover, a play-form does not have to be a small part of the game action, but can encompass it, as the play-form *playing field* does. A playing field also fulfils the above criteria: It is recognizable and functionally related to the game that takes place on it. The term play-form thus denotes phenomena on different levels and, above all, of different materiality. Play-forms are not only found in regulated games, but also in free play, greek paidia. (Caillois 2001, 13, 27 ff.) Here we find objects like *balls* or *dolls*. The materiality of these objects is secondary to their formal properties: that they are recognizable as balls or dolls and that they potentially function as such. Formal properties can certainly be rooted in practices as well: a tin can become a ball during the course of play and is then recognized as such, not least because it is used (kicked or thrown) as such. The execution of the game, the practice of kicking, for example, thus becomes part of the formal properties of the can as a ball. Furthermore, I would consider basic modes of playing as forms of play, as long as they are complete and recognizable: "pretending," competition, intoxication and gambling. These are the "attitudes of the player" into which Caillois divides play as a whole. (2001, 11 ff.) They are self-contained (pretending is not competition, we can usually identify limits) and recognizable (we recognize play) as well as functional: they do work, they can be used to create play.

"Spielform" (play-form) early on. (Leschke/Venus 2007) There, however, the concept remains presupposed and undeveloped, positioning this text as a continuation and reevaluation of that line of research. The interrelations, migratory movements and hybridizations between computer games and film are analyzed by Andreas Rauscher, who uses the term cineludic form. (Rauscher 2018, esp. 253 ff.) The concept of form is often used to examine narrative phenomena, also in the context of digital games. (Sorg 2009)

Play-forms, as defined here, identify parts of games. This means they are located below the level of the game as a concept – play-forms occur in games. At the same time, many play-forms occur in different games – stability and recognizability stimulate this. Thus, a play-form can serve to group together different games in which it occurs. It is possible to create a long list of all games in which dice occur. This does not mean that all games on this list would be recognizable as *dice games*. This is crucial in that recognizability is central to identification as a form here. Indeed, we can think of games that contain dice but would probably not be recognized as dice games: target shooting at dice, for example. A more commonplace example is MONOPOLY, which contains the game form playing cards but is rarely identified as a card game. Our list would therefore only be a list of games in which the game form dice occurs.

Nevertheless, the terms dice game, card game and board game denote classes of phenomena with a formal character: as categories, they are stable, recognizable and functionally related to a perceptual framework. This framework in turn is less the game itself than socio-cultural environments in which games occur (a *toy store*, for example). The distinction between dice games, card games and board games helps navigate these environments. The stability and recognizability is shown by the fact that these terms are commonplace and commonly understood. Thus, they are forms, but not play-forms, since they are not functionally related to the game as a perceptual frame, but to environments of games. Thus, the term card game is not a name for the list of all games in which cards appear. Rather, other game properties are associated with the game object playing cards due to their affordances. These properties become more and more interconnected in the practice of the game until they merge and crystallize, as it were, thus forming a new, larger structure. This structure is larger than the play-form of playing cards, yet it is a form because it is stable, recognizable and functional. Because of its connection of play-forms with other play-forms and other characteristics, I propose the term *game format* for this type of form. This expresses the fact that here different forms and properties combine to form a more complex structure, which in turn carries formal properties.

In the following, the card game is discussed as an example of a game format. As shown above, the spectrum of card games that are actually played converges more and more over time around the aspects of combination and information handling, while the gambling aspect of card games fades into the background. The card game format differentiates itself from the initially similar dice game and moves towards an ideal type of card game format. The characteristics of the card game format are therefore not limited to the use of the playing card as a game object, but include game characteristics that occur particularly frequently in games with playing cards. The affordance character of the play-form *playing card* has effects here. With the ideal type that has become recognizable as an abstraction from the forms that occur, we can now in turn look at existing card games and categorize them as "less typical" or "more typical" card games. If we speak of games in which the game form playing card occurs, we must consider all of these games. If we speak of the *game format* card game, this has a center and an edge. The development towards the ideal type is already a material process from the beginning, that is, in the material characteristics of the cards, on the one hand, and in the physical and psychological characteristics of the people who handle the cards, on the other hand, which is what they find especially pleasurable about the games. Here, the sphere of the social and its historical development have an effect at different points. Cards are produced socially, in a division of labor. Without society, there can be no playing cards. What people find pleasurable interacts with socio-cultural framings, as in the contrast between aristocratic and bourgeois play. Finally, society also influences the characteristics of the human bodies in question – for example, what they perceive and with what attention, how strong they are or how cautious. This means that forms develop in relation to practices and are produced by practices. At the same time, they affect practices, they even determine them in part. In this light, the practice appears as the processual aspect of the form, the form as the stable aspect of the practice.

As mentioned above, boundaries between game formats are creatively dissolved at the beginning of the 20th century.[15] The borderline case of racing games acts as the spearhead here, with games that have different themes but very similar rules. Themes include car racing, *With the Airship to the North Pole*, *Expedition to the Jungle*. The rules are usually based on the GAME OF GOOSE, SNAKES AND LADDERS or PACHISI. (Faber 1997, 28 ff., 34 ff., esp. 46 f.; Faber 2007, 132) At the same time, the card games receive a pedagogical revision: the family card game, whose most successful exemplars are HAPPY FAMILIES and BLACK PETER. (Krumbein 2007; Thiel 2007) Thus, two new game formats appear at the same time and new expectations are placed on them: the modern card game and the modern board game. Finally, designed games appear that are newly developed, often combining many game forms. The most successful of these modern games is MONOPOLY, a board game that includes both dice and cards.

The plethora of games that are available today, often with only minor variations from one another, may give the impression that it would be difficult to clearly distinguish between types of games. The historical game taxonomy described above, on the other hand, shows that historical game phenomena do not tend to mix, but that the various moments of attraction appear to the players as clearly different. This perception of distinct game phenomena is reflected in the socio-cultural development of these phenomena. Even in the modern blending of the ideal-typical game formats, the play-forms remain different from one other; they are merely recombined as building blocks. Thus, the affordances of game elements are not only effective in the lived play practices, but also crystallize in the design of the objects that make up the game material. This makes some aspects of the phenomenological qualities of play practices historically and archaeologically explorable. At the same time, the concept of play-form offers an analytical perspective with which the hybrid game formats of today's board and card games, their dynamics as well as their remediations (including those in computer games) can be described.

15 This marks the climax of this transformation, the first preliminary developments of which begin with the production of playing cards in the 14th century. (Clüver 2021)

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PLAYING WITH LIGHT

On the Materialities of Video Game Spaces

Arvid Kammler

ABSTRACT

When playing video games players are encountering light in many different ways. On the one hand the display rendering the game space visible is emitting light into its surroundings. On the other hand the environment itself may become visible in reflections on the display. Both phenomena contribute significantly to the experience of playing video games. Consequently this calls for an investigation regarding the constituent effects of light in the process of playing video games. This contribution is going to question the superimposition of spatialities of light as well as the construction of the space of light in the act of playing. The second part of this contribution deals with the question of the processuality of the light play space. Thirdly, the meta-materiality of light as a constituent element of the video game is of particular interest. Light in video games appears as a process of constant transformation and manifests itself as representation of sand, water and spaceship corridors and other materialities. Since it seems to always be visible only as a reference, the question must be asked whether light is ultimately describable as the simulacrum of the video game.

Keywords: light, surface, simulacrum, space, process.

1. INTRODUCTION

The playing of video games has become so commonplace that its closer examination often seems mundane or superfluous. But it is precisely this mundanity that should prompt us to take a closer look. And so this human-game arrangement of playing video games is mostly concealed within formulations such as *while playing computer games* or *in the video game situation* mentioned at the beginning. The subsuming under a situation or mediation arrangement also necessarily eclipses the current variety of quite different human-play arrangements, be it situated on the sofa, on the bus or at the desk. However, these arrangements all have at least one thing in common: they are spaces of light.

The following remarks are preceded by several basic assumptions. The first is that light as the precondition for the video game in the first place. Secondly, it is that of light as the material of that which appears in the video game, which refers to the fact that the light of the video game image always appears to us as something else – it disguises or conceals itself. Looking closely is important if the different spaces of light of the video game situation are to be identified. Not only am I sitting at my desk in front of the monitor in a room that will be lit in one way or another, be it by daylight through the window, by a street light or artificial light sources within the room, but I am also looking at a spatiality represented by the monitor image, which firstly is only created by the light emanating from the monitor itself and secondly radiates into my room through its openness to it. This effect that can be distinctly observed during night-time walks in the city. In addition, the space of light around the desk merges with that of the video game, which ideally is not consciously experienced and only becomes noticeable in the disturbance caused by reflections on the otherwise translucent surface of the screen. Accordingly, we can say that in this specific arrangement of the video game, two different and diffuse spatialities come into contact with one another. The light radiates beyond the border of the monitor, originating from the two points mentioned here, which otherwise always diametrically oppose each other in the medial boundary logic, which reveals the display surface as a semi-

permeable surface, or threshold, between the real and the virtual. The overlapping of spaces that takes place in the process of playing video games blurs the boundary that, with regard to immersion theory, would otherwise always mark a crossing over, entering or moving into. Consequently, when looking at the light of the video game, it becomes clear that such demarcations cannot be maintained in this arrangement of mediation. It is therefore necessary to approach this arrangement from a different point of view: It should be seen less from the position that perceives them as separate spheres that can be entered and left at will, and more as a process of cooperation, or rather the interplay of video game and player.

The term *Lichtspielraum* (play space of light) is meant to describe the spatiality that emerges from the interaction of game and player, meaning from the relationship between hard, soft and wetware. With reference to Gilbert Simondon's theory of *individuation*, the *Lichtspielraum* is actualized from the accumulation of potentialities emerging from the interaction (Simondon 2008, 2020). So it is not something that can simply be switched on and then be observed. Emerging from the aforementioned relationship, the *Lichtspielraum* marks the spatiotemporality of the video game, and thus it also becomes clear to what extent its processuality is characterized, particularly at the beginning and end of the video game activity.

Taking a step back and looking at the video game image itself, it becomes apparent that in its basic mode of existence the image as a composite of light of different wavelengths already appears as a process. While this fact can be illustrated very well when observing how CRT monitors generate images, the process of generating individual frames is not as easy to visualize with current screen technologies (The Slow Mow Guys 2018). Suffice it to say, however, that the same principle of line-by-line frame building can be seen when looking at CRT monitors. With regard to current technology, this takes place in the background within a buffer memory from which the fully calculated images are displayed at high frequency. Accordingly, the video image at hand is continuously updated, even during the presentation of apparently motionless scenes. The particular processuality of the video game image is also noticeable when

looking at the possibility of selecting an image section at will. Everything that is off-screen as a result of my selection is not visually represented and is also not calculated by the image processing. And yet, the off-screen, which was only made conceivable by the film and its editing practices in the first place, can be assigned a certain potentiality from which the video game image is also continually updated, or rather actualized.

For much more than in the film, the off-screen in video games remains present when moving through the architecture of the game space and thus refers to the absence, or rather to the blank space, as a fundamental component of the realization of the experiential space of video games. In general, orientation in virtual space, especially in the three-dimensional space of the video game, only works when the player accepts that the images that are not represented at any particular moment in time are still present in some form off-screen, and therefore co-constituates or *informs* that which is present. In this respect, both the presence and absence of light is constitutive of the *Lichtspielraum* and consequently the potentiality of this relationship presents itself as an open space of possibility and a basal component of this space of experience. Two examples below will illustrate that the presence or absence of light does not necessarily have to be located in the off-screen, but both can become *Lichtspielräume* as a special means of design.

2. MATERIALITIES OF THE *LICHTSPIELRAUM*

Throughout the history of video games, there has been a persistent effort to visually recreate the physical real world as accurately as possible. For example, there are special techniques to transform two-dimensional textured wallpapers into richly detailed reliefs, depicting brick walls, tiled floors or wood-panelled conference rooms as realistically as possible. The effect of current graphic design methods and possibilities is that, as soon as we come into contact with these surfaces in video games and already have had experiences with their real-world equivalents, we are affected in a very similar yet also somehow different way. With each new generation

of graphics cards, manufacturers promise even more realistic representations of surfaces, bodies and materialities. What gets lost in the marketing-driven gibberish and the continual promises of finally having achieved realism is the question of whether there really is a fundamental desire for realistic, meaning real-world and physically "correct" representations of, for example, light reflections on water or shadows cast by pebbles on the beach. On the surface this may be the case, but in my view, it's worth considering what kind of a reaction an all-too-realistic depiction of a summer's midday in the CALL OF DUTY series might provoke in the player. Given the consistently flat appearance of this image due to the particular lighting, devoid of any contrast or drama, the disappointment would probably be great.

The aesthetics of many games suggest that in the process of playing video games we usually want to experience not so much the closest possible representation of reality, but rather something that affects us in a meaningful way. In this context, the representation must be consistent within its larger framework and at the same time contain gaps according to which it can be distinguished. Realism in the sense of objective reality is thus more of a sales strategy and less of a concretely aesthetic demand made on the video game's *Lichtspielraum*. The video game must struggle with one crucial fact: the lack of haptics. Although we operate hardware interfaces that are integrated into our body schema when we play, these interfaces translate our input movements into character movements and consequently mediate between the game space and the play space. However, the resulting kinesthetic connection builds on a variety of audiovisually constructed aids to simulate the very lack of haptics of real-world material, among other things.

Fig. 1: Cobblestone in ANTHEM (2019). (Author's screenshot)

If we think of the representation of various ground surfaces in video games, such as cobblestone after a rain shower, we are able to recognize it as wet cobblestone. And we also know what it feels like to walk or ride a bicycle on this surface, or what it feels like to touch it with our hands. What is simulated here, however, is not the realistic impression of walking over cobblestone, but rather the approximation of what it would be like to walk over this particular kind of cobblestone in this particular situation. Paradoxically, the aim of this superficially realistic representation of cobblestone is not to approximate the real thing as closely as possible. It is much more important to try to close the gap of the missing haptics of the video game experience. On the one hand, this is done by calling upon past experiences as well as by referring to an assumed exemplar of the real. However, the representation must be more than these exemplaries, and is thus always an idealistic representation.

As a brief interjection, it should be noted that in addition to the visual level, the auditory level must not be neglected, which, in combination with the visual, constitutes the special aesthetics of the light room. As Michel Chion has noted for the film as a medium, sounds are also used in the video game to set situations to music that has little in common with the real soundscapes of these situations. So in addition to the ideal representation of cobblestone, a sound is also sought that corresponds to walking on this

surface, but this sound is not necessarily produced on the basis of the actual practice of walking on the particular surface. The film spectator recognizes sounds to be truthful, effective and "fitting not so much if -they reproduce what would be heard in the same situation in reality, but if they render (convey, express) the feelings associated with the situation (sic)" (Chion 1994, 109).

However, there are also video games that reduce the representations of their materialities to such an extent that the workings of light itself are made visible. Consider the cases of *The* UNFINISHED SWAN (2012) and SCANNER SOMBRE (2017). In THE UNFINISHED SWAN, players begin in a completely featureless white space and need to throw black blobs of paint to make the surrounding architectural space visible via stark black and white imagery. Conversely, in SCANNER SOMBRE, players face a pitch black environment that needs to be mapped with a scanning tool, revealing the surroundings as a dotted pattern that changes color depending on the distance between mapped surfaces and the player. What these examples illustrate is that the extreme reduction in both cases runs diametrically opposed to the claim of realism often presented by large-scale video game productions, thereby revealing various modes of operational lighting.

It is recognizable that light plays a prominent role in both examples, both in its presence and absence. As players, we work directly with light and, by contrasting it, create the spaces that surround us ourselves. The extreme reduction and the practice of playing with these gaps reveal the ontological part of light in the emergence of the *Lichtspielraum*, which is not only a *Lichtraum* (space of light) but also a *Licht-Spielraum* (space of playing with light).

If we look at any one of James Turrell's Ganzfeld installations for comparison, we can say that in both cases light is brought into the foreground and appears as an actant and not so much as a background phenomena (On the relationship between actor and actant see Latour, Bruno, 1996). In Turrell's work, light appears completely self-referentially as a perceptual space in which, to paraphrase Maurice Merleau-Ponty, light as *that which is seen* coincides with us spectators as *the ones seeing* (Merleau-Ponty 2003, 167). Both spaces, that of light in Turrell's work and that of the play

of light, emerge from the process of cooperation. In Turrell's work, light itself becomes space and materializes as an object of experience. Designed on the basis of Euclidean space, however, it transcends it and as a result architectural boundaries appear diffuse and are no longer clearly perceptible.

In THE UNFINISHED SWAN, and to some extent in SCANNER SOMBRE, something similar can be observed at the very beginning when players are confronted with the infinitely deep (or flat, however you may look at it) white or black. In the former, players first observe the light of the video game in its purest form, and incidentally also the corresponding potentiality mentioned at the beginning of this contribution: just think of the construct in THE MATRIX (1999) that serves as the basis of loading anything imaginable, or in this case programmable. In any case, players would be hopelessly lost if they could not somehow load the program, or the game, by wresting contrast from the blinding excess of light and thus effectively allowing the game space to emerge. In contrast to Turrell's light, the light in the video game is not completely self-referential, but serves to represent something else. Through digital processes, light is consequently modelled, transformed and appears in the form of objects, surfaces and their illumination as sand, water, leaves on a tree or corridors inside a spaceship. Light refers predominantly to surfaces, structures, cracks, folds and at times to atmospheres or diffuse spaces.

3. HYPERREALITY

With reference to Jean Baudrillard, we could also say that a hyperreality becomes visible in the workings of the light in video games when, for example, this one surface texture of cobblestone emerges from processing countless real-world exemplaries gathering in elaborate production processes with hours of research and design work. This is necessary because it is only in this way that the resulting texture ultimately functions in the context of its hyperreal environment, for truly realistic representations would be largely out of place in the context of the video game due to their mundanity. Regarding what I have coined as the closing of the *haptic gap*,

a further point must be added because the hyperreal audiovisuality transgresses its initial modalities of mediation in the process of play. By addressing perception, sensation and past experiences, meaning the rendering mentioned by Chion, the eyes become hands, to a certain extent, seeing becomes touching. The material, the ontological basis of which is light, is thus not only visible, but can be felt in a diffuse way in the millimeter-thin space between fingertips and hardware interface. The light of the video game as sand, pebbles, dust and debris seizes us in a way that no mundane real-world light situation ever could, precisely because it is a technical-medial mediation performance.

Baudrillard's concept of the hyperreal leads us to the closely related notion of the simulacrum. According to Baudrillard's considerations, the hyperreal characteristically stands for the referencelessness of signs in the ongoing simulation event. He understands simulation not as a form of illusion, but as the basis of reality qua the distinction between the signifier and the signified (On hyperreality and the simulacrum see Baudrillard 1978a, 1978b, 1994). Applied to the cases addressed here, we can also take it to distinguish between the representation and that what is represented by it. The hyperreal is characterized by the fact that, due to the continuous development of signs, these can no longer be distinguished from real-world objects. Furthermore, the real only consists of signs, which are themselves devoid of meaning because they refer to nothing other than themselves.

Admittedly, in the present case we are dealing with a mixture of two levels of reference. One is the representation of materiality through light; the other is the reference being made by video game-materialities to materialities of what Baudrillard calls objective reality. The second level of reference is directly connected to comparable considerations by Baudrillard on stereo music reproduction, which in the hyperreal no longer allows any difference to be detected from the experience of hearing music at a live show (Kneer 2005, 150). Nevertheless, using the example of the cobblestones, we have established a difference between the video game representation as the essence of all cobblestones in existence and their reference to their real-world counterparts, and located the specificity and

functionality of the video game representation precisely within that difference.

In this case however, the video game-specific Platonism of the material opposes the emptiness of meaning of the simulacrum of the hyperreal order as formulated by Baudrillard. In the tense relationship of the aspiration of realism and the *going-beyond* that is necessary for the function of video game materiality, the actual hyperreal form is revealed, which, to be precise, is not a form at all, but a representation of its original. The materiality produced from countless images of real-world images of the Platonic ideal presents itself to us in the video game not as a second-order image, but rather as the ideal itself that is realized from all the assembled fragments of exemplary reality. Video game materiality always appears as an ideal in its respective context and is neither in itself closed, nor part of a closed space of experience, but rather open towards potentiality. With regard to each video game-specific ideal of materiality, the difference between type and token is in a sense annulled, but in my view this should not be taken as an indication of an absence of meaning in the hyperreal order. The functionality of the human-game arrangement is fundamentally characterized by an openness toward its various environments and, as Baudrillard describes it in the context of his simulation theory, is built on meaning generated by differences between sign and signified. These spatiotemporal mediating situations in flux thus position themselves against the ideal of an extra-medial and objective reality and make this utopian horizon itself recognizable as hyperreality. Ultimately, light in video games brings forth situationally ideal materialities in an emenating and modelling manner and, as an ontological component, video game light sometimes appears self-referential.

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MATERIALITIES OF THE MISE-EN-GAME

Playing with Cineludic Forms

Andreas Rauscher

ABSTRACT

The mise-en-game connects the analog game board and the digital playground within a network of cinematic playfulness. It provides a more expanded perspective on a transmedia history of cinema. This article discusses three contexts for the materialization of the mise-en-game that have been prominent since the late 1970s: the social space of arcade gaming, the material adaptations of board games and the emergence of hybrid world-projections initiated by role-playing systems.

Keywords: board games, arcade, cinema, transmedia

1. INTRODUCTION

It has become a kind of common trope for a certain generation of cinephiles that JAWS (1976) and STAR WARS IV – A NEW HOPE (1977) introduced the blockbuster age. Even though both films were directed by auteurs from the New Hollywood, Steven Spielberg and George Lucas, they eventually turned into a swan song for this short-lived era. From the late 1960s to the early 1980s, directors with a personal artistic profile and an individual cinematic style, such as Martin Scorsese, Brian De Palma, Robert Altman, Peter Bogdanovich, William Friedkin, Monte Hellman, Michael Cimino and others, took control over the devastated dream factory that had lost touch with the younger generation. Informed by international art house cinema, from Orson Welles and Ingmar Bergman to Federico Fellini and the European new waves, and with profound knowledge of the history

of the classic Hollywood genre, their work combined artistic integrity and commercial appeal.

With the surprising box-office success of JAWS and the first STAR WARS trilogy (1977-1983), merchandising and high-concept formulas and summarizing a film in one catchy sentence became the new standard for Hollywood. Even though Spielberg and Lucas were still inspired by their dedicated passion for cinema and their knowledge about film history, taking cues from directors like Alfred Hitchcock, John Ford and Akira Kurosawa, they were also open to all kinds of attractions found in games and theme parks. The STAR WARS saga and their joint effort in the INDIANA JONES films relied on a tongue-in-cheek-playfulness found in the cheap series of their youth, such as FLASH GORDON and BUCK ROGERS. Spielberg and Lucas based their set pieces on obstacle runs through ancient ruins, mine car chases in the temple of doom and high-speed trench runs across the Imperial Death Star.

A rather conservative interpretation of this development would draw a line from the early days of blockbuster cinema in the mid-1970s to the digital disintegration of indexical realism in the early 1990s. Once again, the usual suspects Steven Spielberg and George Lucas were blamed for the supposed decline of cinema. This time the corpus delicti were the digital dinosaurs roaming across the multiplex screens in the JURASSIC PARK series (since 1993) and the second STAR WARS trilogy of prequel films (1999-2005).

Upon closer examination, however, there seems to be something wrong with this mono-causal narrative of commercial treason and digital decline. If the franchise era really resulted in a continuous move from physical sensations, even if they smelled of plastic, towards the migration to digital galaxies stored in a computer far, far away, then why did the board game based on Steven Spielberg's JAWS arrive with a delay of over forty years in 2019? It is made of paper clips and even includes a wooden shark. And why is the Force still obviously going strong with analog STAR WARS toys, even resulting in the 19xx reissue of a late 1970s ESCAPE FROM DEATH STAR board game?

Cultural critic Simon Reynolds offers a reasonable explanation in his book RETROMANIA. Popular culture has become so obsessed with its own past that people are stuck endlessly recycling memories of childhood past and nostalgia for an age that never existed. But beyond these self-contained retro-cycles, a more basic dynamic seems to be at hand that finds expression in gaming artifacts and practices of playfulness. The resilience of analog artifacts, from vinyl records to toys and board games, results from a larger process concerning the dialectics between phenomenological experiences of sensual sensations, on the one hand, and cognitive mind-mapping of transmedia story-worlds, on the other hand.

The cineludic forms that I have discussed in more detail in regard to video games in other contexts are not limited to digital forms of play (Rauscher 2015). They point to a deeper history of playful experiences across media that is yet to be discovered and put into context in regard to film history. For example, the JAWS board game released in 2019 combines cinematic genre traditions of the cycle of creature horror films with different forms of strategic game-play. The different goals are reminiscent of the best-selling board game SCOTLAND YARD. One player controls the shark and writes down its hidden moves. Just like the notorious Mister X in the SCOTLAND YARD board game, he has to avoid the other players that are in pursuit of him. Apart from the minor detail that Mr. X tries to escape via the London public transport system and the shark sneaks up on unsuspecting tourists for lunch, the game mechanics of JAWS and SCOTLAND YARD appear to be quite similar.

In contrast to the popular board game spy chase around London, however, JAWS moves to a second act on a new gaming board. After having mastered the first task on a separate board the action changes to another board continuing the game in another scenario adapted from the film. Comparable to the level structure of a video game, the players now have to defend their boat against a shark on the high seas. In contrast to purist positions that believe that a film's narrative can never be adapted to a game, the JAWS board game encompasses the whole story from Steven Spielberg's film. Its material realization resembles paper prototypes for testing video game concepts before they are implemented into digital

code. Unlike the popular narrative of the digital dematerialization and decline initiated by blockbuster cinema in the 1970s, the analog still prevails. The nostalgic longing for haptic board games is one reason for their lasting success. Taking cues from the material perspective in game studies as well as reconsiderations of classic film theory, the following paragraphs outline a few reasons for the persistence of analog play in a supposedly digital age. Furthermore, prospects of hybridization that combine digital and analog elements will also be discussed. After a short introduction to the concept of mise-en-scène and its application to ludic structures within cine-ludic forms of the mise-en-game, three different fields of study will be introduced. They apply to film as well as gaming history. The first case study considers the materiality of arcade gaming, the second one deals with board games based on films, and the third will consider role-playing games (RPG) and connected forms of gaming experiences as playful portals to transmedia imaginary worlds.

2. CUTSCENE INTERDIT? - THE PLAYFULNESS OF THE MISE-EN-GAME

A useful frame for locating and discussing the haptic attractions and cognitive mappings of toys and games related to films and cinematic tropes can be found in the concept of mise-en-game. It adapts and configures the concept of mise-en-scène from film studies that originated from directing actors and arranging props on a stage in order to add further layers of meaning. With regard to directing, a film the mise-en-scène relates to the composition of the frame and the relations within a scene. There is still disagreement about whether or not the camera must be included in the mise-en-scène, or if the term only relates to the objects recorded through its lens. Film scholars David Bordwell and Kristin Thompson have suggested one of the most prevalent definitions of the term. In regard to the mise-en-scène they refer to "all of the elements placed in front of the camera to be photographed: the settings and props, lighting, costumes and makeup, and figure behavior" (Bordwell/Thompson 2008, 479).

But what does the mise-en-scène contribute to the analysis of games? The concept experienced its heyday in the mid-20th century. It established a more precise idea of cinema as an art form, which is unlike other audiovisual arts. It could also be understood as an indicator for the creative styles associated with modes of production and different genres. The materiality of the profilmic space became more important than the techniques of montage cinema assembling shots that could be taken out of context. The parallels between film theorist André Bazin's polemic instruction of MONTAGE INTERDIT and recurring debates around the use of cutscenes interrupting the flow of game performance are quite striking.

In his introduction to VIDEO GAME SPACES, media scholar Michael Nitsche comments on the illusions created by the framing of a film set through the eye of the camera:

> "If a film audience were to step through the camera and onto the film set they would see a modern film studio. The diegetic film world would be deconstructed as the production studio replaces the fictional world. Instead of a ceiling there might be a battery of light; where one would expect the fourth wall, there would be cameras, sound equipment, and a number of technicians working to produce the illusion. This space is not the world of the story but that of the production of the film."
>
> (Nitsche 2008, 85).

The classic set-up of stepping through the camera is often used for comedic effects with characters breaking the fourth wall and suddenly ending up in front of the studio technicians. In contrast to this slapstick routine that has been employed by comedian Mel Brooks to meta-Marvel character Deadpool, video games based on 3D-engines promise the simulation of a continuous space that can be traversed by the avatar. Another crucial difference from the traditional backdrop sceneries on a theater or film stage lies in the emulation of material relations and physicality. Even exaggerated cartoon worlds and outer-space scenarios follow the parameters defined by the rules and the mechanics.

The relevance of the mise-en-scène emulated and extended to an interactive mise-en-game for the intersections between animation, feature

film and games can be explained in the following update to Nitsche's example: If a film audience incidentally does not step onto an old-fashioned studio set, but instead enters an environment enhanced by huge LED screens and a game engine, they would experience the simulated movement through fascinating extraterrestrial worlds and emulate the interaction with objects. Technical equipment of this kind has been used to shoot the STAR WARS series THE MANDALORIAN (since 2019). The virtual sets take on a material quality. Now they are not simply added as an optical background in post-production, but like the digital scenes in James Cameron's AVATAR (2009) they can be put into storage and reanimated a few years later for further episodes and sequels.

Film scholar John Gibbs points out the connectivity between the several elements of the mise-en-scène:

> "It is important to be able to describe the individual elements of mise-en-scène, and it is important to consider each element's potential for expression. But it is worth remembering from the outset that these elements are most productively thought of in terms of their interaction rather than individually – in practice, it is the interplay of elements that is significant. Additionally, we need to consider the significance acquired by the individual element by the virtue of *context*: the narrative situation, the 'world' of the film, the accumulating strategies that the filmmaker adopts."
>
> (Gibbs 2002, 26)

The configuration of the ludic parameters by the player results in a change of the material state experienced sensually by their actions as well as an actualization of the mental image of the game-world. The mise-en-game also connects the analog game board and the digital playground within a network of cinematic playfulness. It provides a broader perspective on a transmedia history of cinema. The following paragraphs will discuss three contexts for the materialization of the mise-en-game that have been prominent since the late 1970s: the social space of arcade gaming, the material adaptations of board games and the emergence of hybrid concepts of world-projections initiated by role-playing systems.

3. REMEMBRANCE OF ARCADES PAST

One of the most prominent examples of early cineludic forms and their transmedia circulation can be found in the film TRON (1982) by Steven Lisberger and its accompanying arcade game released that the same year. The film envisions a story about heroic cyber gladiators living within a computer battling the evil Master Control Program. Flynn,[1] a young game designer played by Jeff Bridges, enters the virtual world behind the screen and supports the programs in their fight against the oppressive regime before returning to our world. The narrative tropes used by TRON can be traced back to Lewis Carroll's ALICE novels and films like THE FANTASTIC VOYAGE (1966) about a minimized team of scientists traveling through the veins of a patient.

Memorable set pieces from the film TRON include a light cycle race that was inspired by the 1970s video game SNAKE, and a duel on two platforms with electronic disks. Both scenes have been developed into arcade games, turning the mise-en-scène into a mise-en-game.

The ludic repetition cycle of the arcade games offers the same scene again and again as a challenge with rising difficulty. The traditional narrative structure of the film presents the scenes only once, and switches between different points of view to enhance the emotional involvement of the audience. In the game the players also become emotionally involved in the game by trying to master the game and not through empathy for the characters. The experience of playing the game is more like a sporting competition than a dramatic play. The mise-en-game remains in the arena instead of following the hero's journey through cyber-land, which is central to the film's mise-en-scène. The arcade game adaptation of TRON brought about the ironic twist that the fictional game from the film was turned into an actual object that still has a dedicated following almost forty years after the film's original release.

[1] Flynn is portrayed by pre-Big Lebowski Jeff Bridges without his significant beard. By the 2010 sequel Tron – Legacy, his alter ego has mysteriously grown one and turned into a kind of lovable but clumsy cyber-Lebowski.

The references to the iconic design of the film TRON can only partially be found in the game itself. The connections to the film that influenced most ideas about cyberspace (at least until the holodeck from STAR TREK – THE NEXT GENERATION emerged) results from the cabinet design of the arcade machine. The graphics on the arcade machine feature the main characters in their lucent costumes, the light cycles and the mysterious grid patterns that can be found in many early visualizations of virtual reality on the covers of early cyberpunk literature.

In comparison to research focusing on a single console platform or home computer platform, studies on arcade machines could provide a deeper understanding of the aesthetic attraction of the sensations of the arcade by including the design and visuals applied to individual games. Games based upon well-known film franchises in particular can offer an interesting perspective on early adaptations that focus more on material components, like the arcade cabinet and interfaces, than transmedia storytelling.

For example, one variation of the Atari STAR WARS video game cabinet (1982) consisted of an X-wing cockpit that allowed the players to be seated at the fighter's controls. The experience of playing the game was similar to the conditions the actors faced when shooting the first three STAR WARS films at London's Elstree studios. But in contrast to the hard-earned money the supporting cast of STAR WARS IV – A NEW HOPE got for looking exerted in front of a blue-screen, the players of the game experienced the sensation of the space fights without any delay. The death star battle was presented in front of them on the screen after inserting a coin. They did not have to wait until the visual effects were added in post-production. Sometimes the presentation of arcade games based upon films included special interfaces like light guns for TERMINATOR 2 and JURASSIC PARK. The special edition of the RACER game inspired by STAR WARS EPISODE I – THE PHANTOM MENACE (1999) even came with a complete replica of Young Anakin Skywalker's racing pod. Examples like these arcade machines show that the haptic controls and the physicality of the gaming experience are more important to the arcade situation than the cognitive pleasures of constructing mental world maps.

The immediate gratification of cineludic attractions shows strong parallels to the early days of film. The cinema of attractions located at fairgrounds presented non-narrative impressions of distant cities, exotic locations, vaudeville acts and magic tricks for a dime. The location of the arcade halls is reminiscent of these beginnings of pre-narrative cinema as well. The iconography of the arcades creates a point of entry to the memory spaces of physical as well as imaginary museums of video gaming culture. The arcade machines collected and exhibited by associations for retro gaming as well as museums preserve and convey the experience of visiting an arcade. The active analog practice of archiving the arcade has an ever-expanding counterpart in the virtual representation and integration of emulated mini-games within open-world games. From the SHENMUE series (since 1999) and later installments in the GRAND THEFT AUTO franchise (since 1997) to the YAKUZA series (since 2005), arcade halls are integral parts of the game environment that allow you to play classic games. An interesting aspect concerning the remediation of the arcade halls is that you have to move your avatar around the emulated space in order to activate the featured games. Like putting a needle on a record or inserting a film reel into a projector, approaching the arcade in real-time seems to be an important part of the collective memory reenacted in these gaming environments within a game.

The personal memories connected to arcade gaming can differ significantly in regard to the various cultural contexts. For example, in West Germany, the public exhibition of arcade machines was accompanied by strict youth protection regulations introduced in 1984. As a result, arcade gaming machines were banned to the secluded spaces of gambling halls next to slot machines and other games of chance.

4. BOARDING CINELUDIC GAMES

After the arcade video game machines were banished to the back halls of the gambling venues, the pedagogically sound alternative of the early 1980s were board game adaptations of successful video games like PAC-MAN, DONKEY KONG, and FROGGER. The board game adaptations of the

classic arcade games are more haptic and static than their virtual counterparts. The tokens featured in the games allow popular characters from the games like PAC-MAN and DONKEY KONG to take shape comparable to their incarnations as toys. You have to press down the arm of the Donkey Kong plastic gorilla to release a new barrel. The four Pac-Man tokens can actually swallow the beads spread across the board. The procedures from the video game had been adapted in a simple form to the analog gameplay. The cars in FROGGER and the barrels in DONKEY KONG move independently from the players by a roll of the dice.

In hindsight, my own personal experience is rather related to these peculiar analog replacement games than the highly stylized retro-scenarios of the 1980s arcade culture circulating in popular culture since the great success of STRANGER THINGS (since 2016). The images of the 1980s associated with Stephen King novels and Steven Spielberg films that entail bicycling to the arcade halls have been rather an experience on the cinema screen in films like E.T. – THE EXTRA-TERRESTRIAL (1982) and THE GOONIES (1985). I remember that the first time I saw a DUNGEONS AND DRAGONS role-playing game (RPG) was in an early scene in Spielberg's E.T. when a group of friends gather around a table to play the seminal RPG.

Before German RPG DAS SCHWARZE AUGE arrived a few years later, my everyday playing experience had been dominated by board games and toys. But this rather analog upbringing also prevented me from the disappointment of the notorious Atari video game based on E.T. that is still considered to be unplayable and frustrating even today. Instead, I got the E.T. board game for Christmas in 1982. Compared to the video game it was fun to play, and replaying it provided an interesting counterpoint to radical ludological lore: Like several other board games based upon and inspired by films, it had a theme that corresponded with its source.

The criticism from ludologists that stories and visuals are only gift-wrappings to the game is highly accurate in regard to culturally well-established games from chess to scrabble. If you put characters from STAR WARS, THE SIMPSONS or HARRY POTTER onto a chess or a MONOPOLY board, it would not make any difference in regard to the game's mechanics or rules.

But this should not be taken as a reason to believe that games only exist in ideal Platonic forms that we glance at when we stumble out of the cavern dwellings of the arcade or after several rounds of RPGs in the basement. If a game, be it analog or digital, combines several mechanics within a mise-en-game and follows a dramatic structure in order to create a ludic adaptation of a film, a novel, a television series or a comic book, the result can very well be adjusted to the aesthetic experience and the themes of the source material.

The E.T. board game succeeded where the notorious video game failed: It created a detailed mise-en-game based upon the film that integrated several mechanics without being too complicated. Moving in concentric circles towards the landing ground of E.T.'s space shuttle, you have to solve several tasks inspired by the film. The players have to disguise the detailed E.T. token as a ghost for Halloween in order to avoid NASA agents. The intergalactic communication device built from scratch has to be assembled for E.T. to phone home and have his long-distance call. In the final round, the cardboard spacecraft is placed in the middle of the board and E.T. has to catch his flight home. The haptic gimmicks like the E.T. toy figure, the spaceship, the phone puzzle, and the ghost disguise provided additional value to the gaming experience. Drawing a cognitive mindgame of E.T.'s mise-en-scène on Christmas Eve 1982 would have been only a little more fun than playing the E.T. Atari video game.

The most promising intersection between films and their board game adaptations is obviously not to be found in transmedia storytelling, but rather in the affects and emotional patterns triggered by the mise-en-scène and recreated in the game. Table top games based on set pieces from the STAR WARS films recreating memorable battle scenes are based on the thrills of finding the right strategy before time runs out and the Imperial AT-AT-walkers reach the rebel base on the ice planet Hoth. A strategy game based on David Lynch's failed franchise DUNE begins with Paul Atreides and his mother Jessica in exile. Just like in the novel by Frank Herbert, they have to recapture control over the precious spice harvest. The opposing fractions of the Harkonnen and the Emperor have to take countermeasures.

The importance of audiovisual composition and animation can be observed in the board game based on INDIANA JONES AND THE TEMPLE OF DOOM (1984). Out of all of the installments in the whole series, the second film about the adventures of the archeologist in search of unconventional third-party funds most obviously relies on the dynamics of a theme park attraction. The underground journey to the temple of doom is followed by a mine car chase and a duel on a rope bridge. In order to achieve the overwhelming attractions of a cinematic rollercoaster ride, the team supporting Lucas and Spielberg studied the exact movements of a theme park ride at Disneyland and recreated them at the ILM lab for visual effects. The continuous motion in the arcade game based on the film featuring the obstacle run through the temple of doom and the mine car chase give the slight impression of the experience on the cinema screen. The board game is devoid of any movement and relies on the simple mechanics of rolling the dice to move the characters and mine cars ahead. The experience of vertigo and dexterity that is to be expected from the cineludic form gets lost in translation.

In contrast to the INDIANA JONES AND THE LAST CRUSADE video adventure game (1989) that benefits from the included printed replica of Henry Jones Sen.'s grail diary that provides additional clues to solve the game's puzzle, the breathless circuit training of attractions of INDIANA JONES AND THE TEMPLE OF DOOM depends on the dynamics of physical attractions. Elements of the sheer pleasure of momentum can be found in toys like the Aston Martin from JAMES BOND - GOLDFINGER (1964) with its ejector seat, or the speeder bike from STAR WARS EPISODE VI – RETURN OF THE JEDI (1983) that catapults its driver from their seat by pressing a hidden button. It is probably not coincidental that pinball machines based the INDIANA JONES and the STAR WARS films feature miniature video games based on the chase sequences displayed on a small screen and controlled by the paddles. Raising the stakes for ludological analysis the outcome of one analog round of pinball results in another game providing a digital bonus game instead of a conventional extra ball.

The compatibility between several game mechanics found in board games, and in some cases like the digitally enhanced pinball machines

even between analog and digital game formats, indicate the possibilities of ludic montage. Dramatic structures that are traditionally defining for RPGs and video games, like character development and plot twists, have become an integral part of board games in recent years. So-called LEGACY games like RISK LEGACY and PANDEMIC SEASON 1 and SEASON 2 build on the mechanics of the basic game. They introduce new characters, additional game mechanics creating a kind of sub-plot to the main storyline, and irreversible turning points.

A season consists of several gaming sessions that can provide thrills, fun and frustration for more than fifteen separate evenings. Dramatic events like a surprising dénouement regarding the power structures and allies in the originally science fiction-related, and since 2020 rather neorealist, strategy game PANDEMIC SEASON 1 result in the destruction of player cards. Actions that were helpful in one round can turn out to be devastating in a later round due to game developments, resulting in changes to the rules. Tearing up a card of a character you cared for or marking a city that has definitely been destroyed by placing a sticker on the game board give more weight to the dramatic set-up. The situations and conflicts of the genre setting conjure up images and moods associated with films and literature, from Steven Soderbergh's CONTAGION (2011) to the MAD MAX series (since 1979). The concept of cooperative play that can be found in most RPG games, but is rather new to board games. This cooperative play creates additional personal interaction between the players that is reminiscent of team-building concepts as well as improvisational theater.

Connecting several mise-en-game set-ups to create a greater whole results in a dynamic experience. The board games discussed as examples in this paragraph are all located within stable genre settings. On entering an empty mansion, you can be sure that you will encounter supernatural events and would not be surprised by a domestic melodrama. The adventures of Indiana Jones and Lara Croft will not suddenly turn into an academic conference on archeological methods. If you have to solve a crime you can be sure that you will find out who committed the murder and why. The combination of different game mechanics and the forms of mise-en-

game applied are kept together within certain genre settings supporting the suspension of disbelief. When treason is committed within your own group, as it occurs in the board game to the BATTLESTAR GALACTICA series from the 2000s or in the cooperative horror mystery BETRAYAL AT THE HOUSE ON THE HILL, the structure of the game prevents foul play. The modification of rules after a certain series of conditions and events is already announced at the beginning of each game. Suspense is created by the fact that at the beginning, no one knows if they will turn out to be the rotten apple within the group when faced with the lurking horror.

The knowledge about genres, their rules and tropes create connections across media that help to define the rules of the board games. The networks between films and games can cross over from analog to digital formats and back again. They can even result in combinations of narrative, ludic and audiovisual elements.

Hybrid concepts between analog board and digital video games have improved significantly through the introduction of app-assisted devices that can be launched on a mobile phone or computer during the board game session. These programs can provide soundtracks, initiate a dramatic countdown or map the navigation through dangerous territory. The pirate adventure board game FORGOTTEN WATERS (2020) features storylines and navigational charts displayed by the app. It organizes the situations the characters find themselves in on the game board.

The Lovecraft inspired MANSIONS OF MADNESS originally featured a complicated set of rules and mechanics that has been remediated for its second edition within an app-program. With the algorithms for moving the monsters being calculated by the app, the players can focus on the atmosphere of the uncanny. The process of table-top-gaming does not suffer any longer from the horrors of mental arithmetic.

5. RECONFIGURING THE FRAME – PORTALS OF PLAYFULNESS

The transmedia processes of genre discourses are only one example of larger structures that continually create gateways to worldbuilding constructions (see the study on *mythos, ethos,* and *topos* in transmedia worlds by Susana Tosca and Lisbeth Klastrup, and the instructive expansion of the concept in regard to atmosphere and *chronos* by media and game scholar Hanns Christian Schmidt). Games open portals of playfulness to larger environments. They reconfigure the frame that limits the view within the mise-en-scène of traditional film theory. In contrast to the almost non-narrative attractions and immediate sensations of the arcade games and the confined genre passages of board games, the idea of game systems contributing to a larger media ecology of imaginary worlds is an aspect that appeals to the practices of cognitive models and mind-mapping. In the cinema, the off-screen space is constructed by the information given in the mise-en-scène and the dialogues.

A traditional position from film theory compares the screen to a window to the world that is created by the camera and the editing. In a video game, especially in open-world games, you can just step outside the frame presented in the cut-scene and discover what can be found outside the main plotline. In regard to the materials of analog gaming practices, the artifacts included in a game themselves become the objects of a larger world.

Early examples of implying a complex world beyond the screen and enhancing the aesthetic experience of story-orientated, text-based adventure video games can be found in the titles designed and published by the label Infocom in the early 1980s. Standardized packages like adventure video games based on the novels by J.R.R. Tolkien offered the pocket book edition of THE HOBBIT and the first book in THE LORD OF THE RINGS trilogy THE FELLOWSHIP OF THE RING as a bonus item. Infocom games like THE LEATHER GODDESSES OF PHOBOS came with an accompanying comic book and a card featuring several smells. In games like PLANETFALL, STATIONFALL and DEADLINE, the material items included in the game box like

maps, newspapers, and navigational charts proved to be crucial to solving the computer game.

In 2013, director and author J.J. Abrams published the book S. / THE SHIP OF THESEUS (2013) that felt like an Infocom adventure without a video game. The hardcover edition of an old lending-library book featured several supposedly hand-written commentaries that pointed out a complicated conspiracy that was covered up by the fictional author of the book. In order to reconstruct the background story to the several fragments of plotlines, several items reminiscent of the Infocom game boxes were included. Postcards, notes on a napkin, clips from newspapers and other material clues inserted between the pages of the lending-library book revealed important information about the background story and comprehensive material for future narratological analysis.

The idea of material fragments from a larger story-world have become increasingly popular since the introduction of RPGs with DUNGEONS AND DRAGONS in the early 1970s. Instead of being limited to a singular game board, the worlds of pen-and-paper RPGs consist of basic rules that regulate fights, exploration and individual skills, leaving the rest open to the players' imagination. The characters the players assume can be developed over successive game sessions, sometimes over the course of several years or even decades. Maps and miniatures become regular tools and favored items to add material dimensions to the RPG campaigns that combine strategic challenges and collaborative storytelling.

The gradual levels of cineludic world-projections and constructions could provide an interesting topic for future studies. Theme park rides and attractions based on popular films from JAWS and STAR WARS to INDIANA JONES and JURASSIC PARK are almost too obvious as candidates for case studies. It would be more interesting to analyze how they contribute to a certain paradigm shift in the presentation of theme park attractions. Since Disney acquired the galaxy far, far away with the purchase of Lucasfilm in 2012, they have produced new series formats and the remaining EPISODES VII to IX that George Lucas announced around 1980. The pioneers of theme park-related world-building also constructed GALAXY'S EDGE, a section of Disneyland that operates more like live action RPGs (LARPs) than

the traditional rollercoaster ride. The visitors take on the role of characters boarding the Millenium Falcon, visiting an outpost threatened by the Imperialist next generation of the New Order, and build their own laser sword. Additional background stories to the setting are available in books providing a kind of traveler's guide to the latest attraction of the imaginary galaxy far, far away.

Another practice of world-making beyond the touristic gaze that is defining for a visit to Disneyland can be found in cosplaying roles from your favorite franchise and appropriating them. One of the very popular examples in the history of STAR WARS fan activities is the internationally organized cosplay of the *501st* Imperial legion. Besides organizing charity events and accompanying George Lucas as a guest of honor at the parade of roses in Los Angeles, they have even become integrated as characters in the novels by Timothy Zahn, one of the most successful and defining authors of the STAR WARS expanded universe.

LARP events that create episodes and campaigns within a continuing story-world take on the event character of a live concert weekend. In contrast to the several comic conventions, the fans do not only dress up as different characters, but they act out their roles in prepared and decorated real-live locations during a certain time frame.

The hybrid forms discussed in regard to app-assisted board games can also be found in mobile supported AlternateRealityGames (ARGs). Games like POKÉMON GO that turn urban spaces into a hunting ground for cute little creatures are among the best-known games of this type. ARGs can even be produced as tie-ins to films like JURASSIC WORLD: FALLEN KINGDOM (2018) and to television series like THE WALKING DEAD (since 2010). At the end of the fifth dinosaur blockbuster of the JURASSIC PARK series, the cloned prehistoric creatures escape the confines of their park. They spread across the globe, waiting to be found in the alternate reality projected onto real urban spaces by the mobile game (that is, if those spaces are not already overcrowded with players searching for Pokémons).

A more avant-garde orientated approach to material transmedia arts can be found in the multi-media project THE TULSE LUPER SUITCASES (since 2003) by postmodernist director Peter Greenaway; the project combines

art performances, films, exhibitions and websites. The idea of psycho-geographic discoveries originating from the situationists in Paris of the 1960s informs different types of urban games that include variants from playful participation in public life and improvisational genre settings to artistic political interventions. They can be regarded as crucial to the question of games being played as artistic activities as discussed by John Sharp in his book WORKS OF GAME. Using the example of chess, he explains how games can become material for art: "For game-minded communities, chess is a thing unto itself, whereas for art-minded communities, chess is an idea space and a material from which art can be made" (Sharp 2015, 8).

The adaptations and transformations of games and cineludic forms as material in the different contexts of artifacts, board games, RPGs and urban art demand further research and differentiation. The category of mise-en-game can be used as a point of entry for media comparative endeavors. The idea of playfulness that is transmitted through transmedia configurations beyond the screen and back again can be regarded as a popular update of processes originally restricted to the cultural fields and ivory towers of high art. The supposed demise of New Hollywood therefore resulted in a new beginning of creative networks built around genre concepts and cinematic worldbuilding. Spielberg and Lucas brought cinema into the arcade halls and inspired the analog extension of cineludic forms into board games. Instead of giving up cinema, cineludic forms rather indicate traces of a para-cinema that continues to the present day and must still be further explored, in digital and analog places, in playing on the screen as well as on the game board.

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GAMES

BETRAYAL AT THE HOUSE ON THE HILL

DAS SCHWARZE AUGE

DEADLINE

DONKEY KONG

DUNGEONS AND DRAGONS

ESCAPE FROM DEATH STAR

FORGOTTEN WATERS (2020)

FROGGER

GRAND THEFT AUTO franchise (since 1997)

INDIANA JONES AND THE LAST CRUSADE (1989)

JURASSIC WORLD: FALLEN KINGDOM (2018)

LEGACY

MANSIONS OF MADNESS

MONOPOLY

PAC-MAN

PLANETFALL, STATIONFALL

POKÉMON GO

RISK LEGACY and PANDEMIC Season 1 and Season 2

SCOTLAND YARD

SHENMUE series (since 1999)

STAR WARS video game cabinet (1982)

THE LEATHER GODDESSES OF PHOBOS

YAKUZA (since 2005)

BOOKS

THE LORD OF THE RINGS TRILOGY

THE FELLOWSHIP OF THE RING

S. / THE SHIP OF THESEUS (2013)

FILMS

CONTAGION (2011)

DUNE

E.T. – THE EXTRA-TERRESTRIAL (1982)

HARRY POTTER

INDIANA JONES AND THE TEMPLE OF DOOM (1984)

JAMES BOND - GOLDFINGER (1964)

JAWS (1976)

JURASSIC PARK series (since 1993)

MAD MAX series (since 1979)

STAR WARS trilogy of prequel films (1999-2005)

STAR WARS IV – A NEW HOPE (1977)

STAR WARS EPISODE VI – RETURN OF THE JEDI (1983)

STAR WARS EPISODE I – THE PHANTOM MENACE (1999)

TERMINATOR 2

THE FANTASTIC VOYAGE (1966)

THE GOONIES (1985)

TRON (1982)

SERIES

BATTLESTAR GALACTICA

STAR TREK – THE NEXT GENERATION

STRANGER THINGS (since 2016)

THE MANDALORIAN (since 2019)

THE SIMPSONS

THE WALKING DEAD (since 2010)

MULTIMEDIA PROJECTS

THE TULSE LUPER SUITCASES (since 2003)

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PLAYFUL METADATA

Between Performance Careers and Affect Modulation

Pablo Abend / Max Kanderske

ABSTRACT

In the field of specialized hardware for digital gaming, an increasing number of products not only promise ever-increasing precision, but also provide self-tracking functions intended to quantify the player's gaming activities and actions. We position these developments at the intersection between the Quantified Self movement and the tradition of playful self-measurement. Building on practice theory, we raise the following questions concerning the datafication of gaming practices and the use of what we call *playful metadata*: What do players and game developers do with data that is generated within, and in relation to, games? How does the emergence of playful metadata modify interactions, both between players and between the players and the game? By analyzing exemplary quantifying practices found in the contexts of speedrunning, competitive gaming and game streaming, we identify three central motives for quantified gaming: 1) the appropriation of games' spaces and goals by players who define their own parameters of success by quantifying their gameplay; 2) the production and communication of individual performance careers aimed at modulating the player's affects towards their own performance; 3) the production of data for competitive comparability and/or cooperative sharing of knowledge.

Keywords: self-tracking, quantified self, quantified play, practice theory

1. THE COMPUTERIZATION OF GAME PRACTICE

> "The Naos QG is a next generation gaming mouse that measures the user's biometric information and movement data. This allows the Naos QG to provide valuable, interesting and fun insights that creates a richer user experience."
>
> (Mionix 2020)

As the manufacturer's description suggests, the Naos QG mouse is a gadget for generating data about one's digital gaming activities. The input device, which comes in the shape of a conventional ergonomically designed computer mouse, measures in-game actions per minute based on click frequency and the distance travelled across the mousepad. Furthermore, it provides information about stress levels during gameplay via heart rate monitoring and skin conductivity measurements.

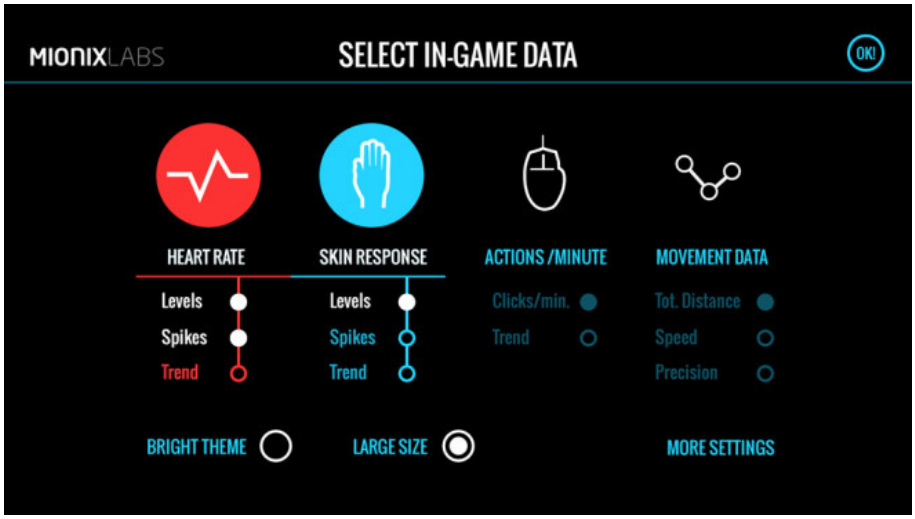

Fig. 1: Naos QG settings menu. (Source: Mionix, author's screenshot)

We posit that the Naos QG and its features are representative of a wider range of recently developed products that monitor and quantify digital gaming: At the hardware level, built-in sensors directly or indirectly measure physical reactions to the game or record eye movement.[1] At the software level, we see a proliferation of applications and platforms that collect, calculate and visualize data about the user's performance in the

[1] See interfaces like the SteelSeries Sentry or the Tobii EyeX.

game. While there are major differences in terms of functionality, all these technologies datafy the act of playing by translating the players' actions and physical reactions during the game into numerical and statistical form.

In this article, we will examine different practices and interfaces of quantified gaming and take a look at different forms of interaction that emerge in the context of datafied games. Following a media-as-practice (Couldry 2004) approach to games, we do not limit our analysis to a particular title or genre, but instead ask what players *do* with games and the data generated in and around them. In doing so, we hypothesize that distinct forms of interaction can be observed in the context of datafied games. In addition to the practices themselves, the necessary interfaces, the hard- and software as well as the wider network and platform infrastructures come to the fore. For as Schatzki points out, practices are by no means to be considered in isolation, but always in relation to the various "material arrangements" with which they maintain a reciprocal relationship. Neither is isolated; rather, practices and materialities form what Schatzki terms "bundles":

> "By 'material arrangements' I mean linked bodies, organisms, artifacts, and things of nature. [...] The idea that practices and arrangements form bundles implies that practices and arrangements interrelate. Practices and arrangements form bundles in that (1) practices affect, alter, use, and are directed toward or are inseparable from arrangements; while (2) arrangements channel, prefigure, and facilitate practices."
>
> (Schatzki 2016, 32)

This occurs first within a field of practice (Schatzki 2006) in which individual media use organizes itself into larger contexts. The analytical challenge here is the scaling: Which forms of use manage to imprint themselves on the larger context and for what reasons? According to Swidler (2006), there are "anchoring practices" that play a key role in the reproduction of larger systems of discourses and practices. Applied to quantified gaming, the question is consequently what significance this form of gaming practice has for digital gaming culture as a whole. To approach this question, it will not only be necessary to answer how individual actions and operations scale into practices, but also how these practices stabilize, how they

are enabled by material arrangements, and how they are involved in bringing forth further material arrangements. In order to accomplish this through a praxeological investigation, we will analyze three bundles with regard to their quantifying anchoring practices: speedrunning and its practices of timing and sequencing, competitive gaming and its practices of logging and stat tracking and game streaming and its practices of visualization.

Commercially available self-monitoring tools can be expected to change both the meaning of play and the games themselves. Consequently, Ben Egliston employs the concept of "quantified play" (Egliston 2020) to shed light on how quantification transforms gameplay and what effects it has on users. From a phenomenological point of view, he asks what new ways of playing are created by self-monitoring and where traditional ways of playing are displaced or even prevented. (Egliston 2020, 3) In a similar fashion and also in relation to digital gaming, James Ash describes how technologies "recalibrate" the perception of the here and now through quantification. (Ash 2012) He illustrates this with the example of the fighting game Street Fighter IV, and observes that particularly skilled players break the game down into individual frames, measuring the time between animations in individual frames. In this way, the frame rate becomes a new way of dividing and measuring time, which historically should not and could not actually be perceived by the recipients. (Ash 2012, 193)

In this sense, quantified play introduces an additional layer of datafication between interface and body that renders previously inaccessible information about the player's actions visible. We propose to conceptualize the data that emerge from and feed back into ludic environments and situations in that fashion as *playful metadata*, with the prefix 'meta' denoting that it is additional data *about* the player's actions, both within and outside of the game, that are generated. In ascribing a certain kind of *playfulness* to these data, we build on Deborah Lupton's (2018) notion of "lively data" produced by self-tracking technologies:

> "The digital data that are generated by self-tracking may be conceptualised as 'lively' in various ways. First, these data are generated from life itself, in terms of documenting humans' bodies and selves. Second, as participants in the digital data economy they are labile and fluid, open to constant repurposing by a range of actors and agencies, often in ways in which the original generators of these data have little or no knowledge. Third, these data are lively by virtue of the advent of algorithmic authority and predictive analytics that use digital self-tracked data to make inferences and decisions about individuals and social groups. These data, therefore, have potential effects on the conduct of life and life opportunities. Fourth, by virtue of their growing value as commodities or research sources, the personal data that are derived from self-tracking practices have significant implications for livelihoods (those using these data in the data mining, insurance and data science industries, for instance)."
>
> (Lupton 2015, 563)

Likewise, the data we are concerned with in this article can be considered as 'playful' in three distinct ways. First of all, they emerge from within games. As they document the player's (re)actions, they open them up to practices of evaluation and spectatorship. Second, they inform playful practices of altering the rules of the game which can be carried out by both the developers and the players. Third, they relate to practices of ludic biography, that is, to the writing of individual performance careers that underpin real or perceived life opportunities connected to playing digital games.

Rendering the imperceptible perceivable via playful metadata often follows an economic impetus and can thus be theorized as part of the ongoing dissolution between the domains of work and leisure. As diagnosed by Rhee: "[...] work no longer happens just at work; it also happens whenever we engage our devices, when we look up restaurants online, stream a movie, send an email or play a video game." (Rhee 2018, 46) Specifically addressing the sphere of play and games, Abend et al. employ the interdependent concepts of "laborious play" and "playful work" in this context. (Abend et al. 2019; 2021)

Seen in light of professional streaming and the ever-growing esports scene, the industry's promise of increasing individual player performance through quantified gaming seems to suggest the possibility of a seamless professionalization of one's own gameplay. Thus, our thesis is that the

technologies used in quantified gaming serve as mediators between individual performance careers and a broader culture of the professionalization of gaming. In this sense, the quantification of individual performances is an important factor that contributes to the professionalization of a practice formerly understood as a leisure activity. (Guttmann 1978)

2. THE TAUTOLOGY OF QUANTIFIED PLAY

With regards to digital games, talk of quantified play is akin to a tautology. Digital games have always been quantifiers of human action. In order to function, they process the input of players by quantifying movements, thereby rendering them machine-readable. The machine then generates an interpretable output, which in turn serves as the basis for the next player input. This output often takes the form of unnecessary obstacles that players have to overcome in order to win the game. (Suits 2002, 55) The attraction of a game is that this process cannot be fully anticipated. Players find themselves within a situation of an artificially created contingency that nevertheless "generates interpretable outcomes." (Malaby 2007, 96) This "interpretable output," which Malaby considers central to the game definition, simultaneously acts as an indicator for success or failure and enables comparability between players. Thus, in order to render visible success and failure, victory and defeat, the input must be made measurable through the game.

While the need for creating interpretable outputs also exists for analog board and card games, as well as for sports competitions, the practice of quantification is usually triggered by certain key events (e.g., goals in soccer). It is therefore possible to perform game actions that do not entail any immediate quantifiable output. In the case of digital games, however, any participation in the game means subjecting one's body – or at least the body parts acting on the interface – to a system of measurement and evaluation. The player operates within a feedback loop in which the machine continuously processes the inputs and generates corresponding outputs.

From this technology-centered perspective, the players of digital games have always been quantified. Playing digital games is thus always a datafied practice. However, this datafication does not necessarily result in a human-readable output of numerical values. Whether numbers are shown to the player and what meaning is ascribed to them in the context of the game strongly depends on the respective genre – from arcade titles, whose high score values signify success or failure without having an immediate effect on the player's actions, to simulation games whose gameplay centers around interpreting and manipulating numerical values displayed across a multitude of tables and charts.

Between the game's invisible underside and its visible surface, the output can take on a range of different forms. For example, success can also unfold spatially or narratively: a new area becomes unlocked, or the game's story progresses.

Whatever shape the output may take, the appeal of playing lies in overcoming the initial, artificially created contingency. This requires a) uncovering the operational logic of the game, that is the relation between input and output and b) adapting one's own play to the routines of the machine: One plays and is played. By directing one's input towards achieving desirable game states, playing becomes a permanent "accommodation to the machine" (Pias 2000, 232).

However, playing "in the form of adaptive action in the designed game space" (Hawranke 2018, 45) is not the only way to deal with digital games. Just as the rules of an analog game can be negotiated and changed during play, this also happens when playing on the computer. Such forms of appropriation in and through play can be called "transformative" (Salen/Zimmerman 2003) or "transgressive" (Aarseth 2007):

> "Transformative play is a special kind of play that occurs when the free movement of play alters the more rigid structure in which it takes shape. The play actually transforms the rigid structure in some way. Not all play is transformative, but all forms of play contain the potential for transformation."
>
> (Salen/Zimmerman 2003, 311)

Aarseth in particular sees transgressive play as the conflict between the "ideal type" of player assumed by the developers and the individual players who bring their own ideas and purposes into the game – as a "symbolic gesture of rebellion against the tyranny of the game" (Aarseth 2007, 132).

3. PRACTICES AND METRICS

While digital games have always been quantifying machines for human action, quantifying hardware and software ensure that additional game information that normally remains invisible and imperceptible to players is collected, sorted, and presented in discrete numerical and dominantly visual form. In terms of game actions, quantifying tools consequently enable the storage of fleeting interactions that can become action-guiding as predictions of future events. In the following sections we will introduce exemplary bundles of quantifying practices around which larger systems of discourse and practice have formed. We will specifically focus on the anchoring practices of sequencing, logging/accounting, and making visible, as well as their relationship to specific forms of play located between the poles of transgression and professionalization we have identified above.

SPEEDRUNNING

One bundle of playful practices particularly relevant to the subject matter of this article is *speedrunning*. In speedrunning, the players' goals substitute the criteria of success imposed by the original design. Speedrunning can thus be described as an appropriation of game space, in which even narrative-driven games are re-interpreted as sprint competitions (Knorr 2009, 223). During a speedrun, playing is no longer a matter of advancing the story, but rather of exploiting all possible means to traverse the game (ibid.) as quickly as possible and set a new record time:

> "Speedrunning is not about breaking down the general rules of the game, rather these are tested for their interpretative and configurational flexibility. [...] The original goal of the game is overwritten by the self-defined goal. The actual run is documented on video and shared within the community. On relevant Internet platforms, these videos serve as proof of the runner's masterful performance."
>
> (Hawranke 2018, 46, author's own translation)

TIMING AND SEQUENCING

Timing and (re-)sequencing here emerge as the anchoring practices around which other strands of the bundle, such as streaming, maintaining leaderboards and performing speedrun historiography and forensics, coalesce. Performing these anchoring practices requires the software equivalent of a stopwatch: applications like LiveSplit allow the users to determine split times for discrete game sections (splits) that constantly relate the ongoing speedrun to previous attempts and/or online leaderboards. To partition the game into sections, players first pick clearly identifiable measuring points like cutscenes or boss fights. This practice is usually part of a preparatory phase which can also involve mapping out the game and the fastest routes to its completion. Once a checkpoint is reached during the actual run, the player can stop the split times manually by pressing the corresponding key. The software then calculates the time lag or lead over the comparison run and outputs it on the screen. For the sake of better accountability, runners who play the same game usually choose the same partitioning, enacting a form of canonization that spreads from the fastest runners to the rest of the community. This practice is not only promoted by sharing runs via live streams or videos, but is now firmly embedded in the split software's functionality of downloading record holder's partitions and split times.

Not every run involves testing the rules for interpretative and configurative flexibility: especially in games that have been 'ran' for a long time, interpretative closure occurs, as individual runs approach the pre-stabilized ideal of the supposedly perfect, i.e. shortest possible run. Accordingly, new runners have to adopt the routes and techniques already worked out by the community in order to be able to participate in the competition at

all. They are still transgressive[2] when compared to the gameplay originally envisioned by the developers, but in terms of game style and interface configuration they are bound to the established conventions of the speedrun community. This homogenization of game actions primarily rests on what James Ash refers to as "spatialization of time" (2015, 67): the partitioning of the total distance one needs to cover to successfully complete the game into individual sequences, which are subsequently assigned numerical values.

Returning to Aarseth's hopeful prospect of a revolution led by transgressive players, it may seem as if speedrunners have indeed broken the tyranny of their game's original metrics of success. But – as one might polemically add – that achievement comes at the cost of having installed a new and possibly even stricter ruler: the temporal regime produced by quantified gameplay.

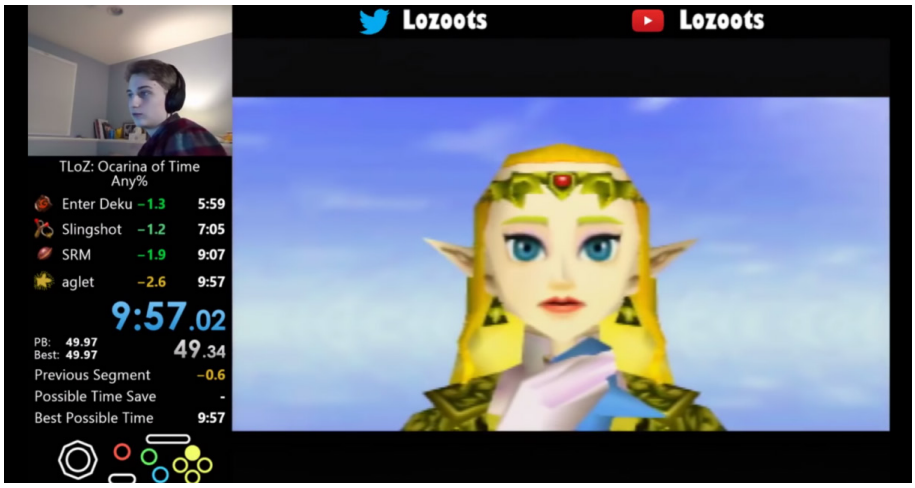

Fig. 2: Screenshot of a successful world record attempt by speedrunner Lozoots in the game OCARINA OF TIME (Nintendo, 1998).

2 Since a vivid community of speedrunners dramatically increases a game's longevity by attracting new players long after the initial release, some developers – especially in popular speedrunning genres runs such as jump & run – have started implementing speedrun modes into their games from the get-go. The interpretative flexibility of the rules thus gives birth to a new practice which in turn becomes a set of rules to be reincorporated into the software.

The display of split times generated by the split software (Fig. 2, top left) is part of the basic inventory of speedrun video aesthetics. It is not a mere visual recall to similar representations employed in televised racing, but a constitutive element of the practice, as the display of time is what allows the gameplay to be immediately perceived as a race at all: The running timer signifies a race against the clock; the split times are colored red or green depending on the gap or lead, signifying a race against an absent competitor.

In addition, runners usually show the gameplay in their videos or streams (Fig. 2, right), as well as their face, the input devices held in their hands, or an abstracted representation of the input commands (Fig. 2, bottom left). On the one hand, this configuration serves to substantiate the measured times, as viewers can verify for themselves whether reaching a checkpoint within the game actually corresponds with the time of measurement.[3] On the other hand, the visual arrangement allows for the communication of one's body and game knowledge to the community by revealing the inputs necessary to execute the virtuoso game action. While the splits, understood as an abstraction of these inputs, act as the central metric for competitive comparison, the gameplay visuals facilitate the cooperative advancement of routes and techniques, as they provide explanations akin to a live-video tutorial. Speedrunning's visual documentation far exceeds the singular value of traditional high scores, which serves to position one's own game performance within a field of (possibly absent) competitors but plays no role in knowledge transfer beyond pure proof of feasibility.

Understood as a form of transgressive play, speedrunning exhibits a disparity between the information displayed by the (unmodified) game and the information required to compete for the self-set goal. To employ Aarseth's terminology: The speedrunner is not the kind of player tacitly assumed by the developers, (Aarseth 2007, 132) therefore most games' interfaces are not designed to meet the needs of speedrunners. This deficiency is best illustrated by the *total time spent on the current play-through*,

[3] It thus enables practices of "speedrun forensics," which can identify cheating attempts by pointing out the fragmentation of the video material (Jobst 2020).

a metric that is rarely used – and seldom displayed – during normal gameplay, but which acts as the pivotal playful metadata underpinning the whole practice of speedrunning. Consequently, players took it unto themselves to time and quantify the progress of ongoing and recorded runs by developing their own software tools and the adherent interfacing practices.

It turns out that here – in line with the bundling of practices and material arrangements described by Schatzki (2016, 33) – practices, goals and media emerge at the same time. Quantified play is not merely a tool to overcome the artificial contingency of play. Rather, quantification and the ensuing playful metadata ensure that practices which originally were not covered by the game's output can now stabilize. By logging ephemeral gameplay actions and generating meta-information about the actual practices of play, quantification creates the conditions for the emergence of specialized communities of practice (Lave/Wenger 1991; Wenger 1998) that cooperatively build and maintain assets of knowledge. Within the speedrunning community, the anchoring practices of sequencing and timing allow members to flexibly shift back and forth in an alternating mode between cooperation and competition. (Hawranke 2018, 46)[4]

COMPETITIVE GAMING

We consider competitive gaming to be another bundle that is constituted by and constitutes specific quantifying practices. While speedrunning's transgressive anchoring practices of timing and sequencing radically alter the nature of games, turning them into competitive races in the process, the quantifying practices found in competitive gaming are more closely aligned with the respective games' already competitive structure and oftentimes rely on built-in functionalities provided by the developers.

[4] Drawing on Huizinga, Schemer-Reinhard (2020, 103) likewise describes the relation between players who share the same game (or its components) while acting as opponents within the scope of the game as being connected in a "spirit of enmity and community." The production of cooperation and consensus by dividing a game into sections and sharing those sections within the community adds another layer to this dynamic.

Though there is significant overlap, both bundles form separate arrangements of practices and materialities as they differ in terms of their intended effect and purpose pursued. To illustrate this point, we will shed light on the anchoring practices of logging and stat tracking.

LOGGING

Especially in games that require fast reactions and complex input sequences, such as fighting games, competitive gamers and streamers often display additional information via a variety of interface layers. For example, STREET FIGHTER V's players can tap into the game's input log, a real-time record of all player commands that is available in training and replay modes.[5]

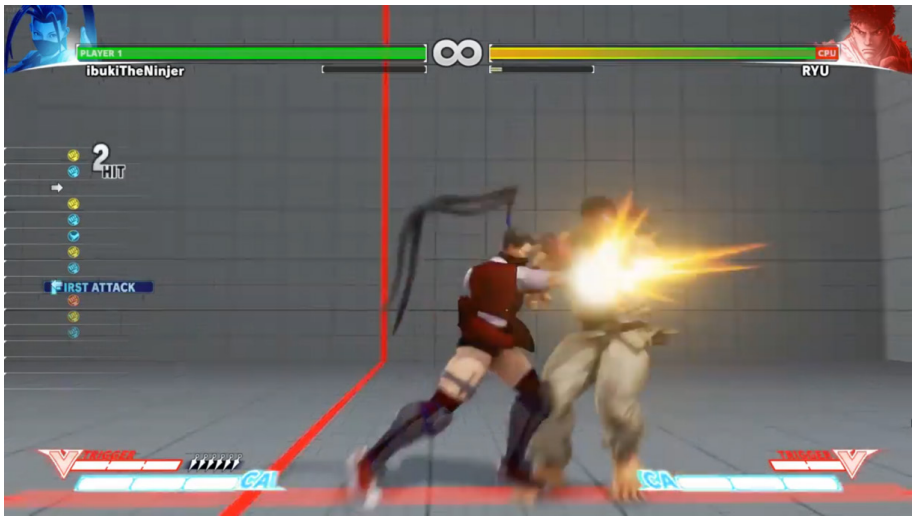

Fig. 3: Training mode in STREET FIGHTER V (Capcom 2016).

The input log represents player commands as symbols arranged in a sequence diagram, (Fig. 3) providing a visual link between the player's physical movements, the actions performed by the game character, and specialized knowledge about the game. The inputs, which usually are not rendered within the game image and have to be inferred from the gameplay actions, are thereby operationalized: Their visualization allows the players

5 Many fighting games provide the corresponding function themselves; external software solutions include the applications Gamepad Viewer and OBS Display Fightstick motions.

to relate them to the notational system used by the developers and the community to communicate certain techniques, such as 'special moves' and chains of commands that are deemed most effective. Accordingly, they play a central role both in checking one's own movement sequences for the sake of error analysis and in conveying input schemes to inexperienced players. The purpose here is to log physical actions and reactions that occur so quickly that they can be traced back to a form of embodied knowledge that operates in parts below the threshold of consciousness. (Ash 2012)

STAT AND MATCH TRACKING

In other competitive games, especially within the shooter and MOBA genres,[6] a more sophisticated form of logging can be found. Here, both the developer studios themselves – in the form of monetized add-on services – and third-party platforms offer the functionality of statistically processing data generated by the players' actions (Fig. 4), tracking various metrics throughout individual matches or lifetime careers.

Egliston sees this quantification of gaming practices as a form of "surveillance capitalism," (Zuboff 2019; Zuboff 2015) a way of exercising power and control based on the aggregation and circulation of data collected through surveillance technologies. He differentiates between three forms of surveillance practices enabled by statistics portals: "self-surveillance," meaning the control of one's own performance parameters for the purpose of self-optimization, "lateral surveillance," (Andrejevic 2004) meaning the mutual control and disciplining of competing players among each other, and "machine surveillance," the analysis of data material supported by machine learning algorithms that generate an ideal concept of good game actions, on the basis of which concrete suggestions for improvement are made to the players who pay for this service. (Egliston 2020a, 9-13) In this process, the data are also used to generate an ideal concept of "good" gameplay actions.

Even the data of players who do not make use of statistical services themselves eventually become the basis of the statistical evaluation, since

6 Short for "Multiplayer Online Battle Arena."

statements about the efficiency of concrete game actions (such as the selection of items or abilities) can only be made if the largest possible basis of comparison of games is available. Accordingly, one could speak of a permanent "cooperation without consensus," (Star/Griesemer 1989) in the context of which a community of practice that is heterogeneous with respect to its own playful ambitions jointly creates a database of played games. In concrete terms, this means that even players who show no interest in the practices of self-monitoring and external monitoring (or who are not even aware of their existence) can participate in the project of quantifying or optimizing game actions.

Fig. 4: An excerpt of the guides section of the statistics portal Dotabuff (author's own screenshot).

The goal of the survey is the automatic formulation of game instructions or guides (Fig. 4), which are supposed to relieve the players of pivotal game decisions. The form of these guides, as well as the aesthetics of the sequence of item and ability symbols attached to them, can be traced back to the early MOBA prototypes, which were still modifications of the game WARCRAFT 3 (Blizzard 2002). Based on "build orders"[7] that originated within the strategy game genre, players communicated their game knowledge in the form of so-called "skill and item builds," sequences of game decisions formulated in the style of illustrated guides akin to cooking recipes, which were shared and discussed in community forums. Ac-

7 This is the optimal order in which one's foundation should be built in the context of a certain strategy.

cordingly, the statistical platforms under consideration are to be understood as material arrangements that support (or at least promise to support) pre-existing practices of gameplay quantification carried out with the explicit purpose of generating and sharing game knowledge – only this time in a fully automated fashion.

When players try to improve their performance via quantification and logging, they are confronted with two fundamental problems: First, data sets are usually incomplete, distributed across many players and platforms, and may already be outdated by the time of analysis. These difficulties, summarized by Pink et al. under the term "broken data," (Pink et al. 2018) occur especially in games whose ideal gameplay[8] is in a state of constant flux due to frequent updates. While updating a game's ruleset is a strategy purposefully employed by the developer studio to keep players interested over long periods of time, it also undermines the community's efforts to "figure out the game," as both the data that has already been collected and the optimization strategies derived from it become unusable in regular intervals. Data evaluation and the appropriate (and timely!) adjustment of input thus become a substantial part of maintaining one's relative "skill" within the ever-changing landscapes of continuously updated games.

Second, isolating the parameters that are relevant for (self-)optimization from the amount of collected data is no trivial task. In the context of complex games – and especially for inexperienced players – it is not immediately obvious which recorded parameters correspond to "good" game actions, that is, those that lead to victory. Hardware and software manufacturers take advantage of this circumstance by promoting the simplistic formula "the more data, the better", while remaining intentionally vague about the actual relationship between data and skill. This approach, which addresses the potential customers' desire for improvement by promising a utility value that could – but it is no way guaranteed to –

8 Often referred to as "metagame," which denotes strategic decisions or certain styles of play that are temporarily considered optimal.

emerge from the captured data, is characteristic for the commodity aesthetics (Haug 1971) that hardware manufacturers and platform operators employ in the field of quantified play.

Let us now return to the Naos GQ mouse for a moment. While its capability of measuring the distance covered by and with the mouse initially seemed pointless, we can now see that it exhibits the same logic outlined above. The manufacturer's ability to tap into the player's fundamental desire for self-optimization and advancement within the gaming competition hinges on hinting at a relationship – one that may or may not exist – between actual skillful playing practices and the supposedly useful metrics provided by their product.

LIVE STREAMING

In the context of our investigation, live streaming could be considered a 'meta bundle', as speedrunning, competitive gaming and a plethora of other gaming-related activities share the same material structures, common live streaming practices, and overlapping communities. Nevertheless, it is possible to differentiate between these bundles by acknowledging the intent behind their quantifying practices, as we will show in the following section.

HEART RATE VISUALIZATION

In the context of live streaming, the practice of heart rate measurement and visualization focuses on the numerical abstraction of physical exertion.[9] When combined with a Bluetooth heart rate monitor, the PULSOID application allows the heart rate to be displayed in real time during gameplay. Even though this is reminiscent of monitoring vital functions with fitness wristbands and watches, it does not involve evaluating data for training purposes. While sharing stats online is part of many practices of self-

[9] Data obtained by measuring heart rate and skin conductance is also increasingly used as an argument within a discourse of nobilitation: Here, an equation of sports and esports is to be achieved via the common factor of physical exertion. (Krell 2019; Wolmarans 2016)

quantification, here the feature is exclusively directed at an audience. Accordingly, the app is primarily intended to appeal to streamers and uses the advertising slogan "Add your live heart rate to your broadcast. Be closer to your viewers!" (Pulsoid 2020) The measurement of vital signs is correspondingly linked to the promise of taking the parasocial relationship between streamer and stream viewers to a level of physical proximity. The FAQ pages also state:

> "Our approach gives the best accuracy, wide customization and simple interface for users. At the same time, Heart Rate Widget is a great way to make your broadcast more interesting and interactive, you can use it to increase viewer engagement or make the stream more realistic."
>
> (Pulsoid 2020a)

Heart Rate Widget's purpose is not to monitor one's health while gaming, but to increase the engagement of potential spectators. The audience should be able to read within the data how the players are affected during gameplay (Egliston 2020) It is therefore a matter of rendering the player's affective involvement visible to increase the entertainment value of the stream. Depending on the context, different patterns of effect and evaluation can be identified. In an esports environment, a lower heart rate is valorized, as it seemingly shows that players can keep calm in stressful situations.[10] In contrast, a higher heart rate shows the wearer's tension and involvement, thereby communicating which game situations are perceived as crucial by the participating players. Here, the heart rate, which is usually tracked in a chart, becomes playful metadata for structuring the viewing experience by accentuating individual 'plays' or situations. Horror game streams exhibit a different dynamic, in which the heart rate monitor renders the player's fear tangible and attests to the visceral effect of the game.

In the context of live streaming, the notion of entertainment value cannot be separated from the competitive dynamics inscribed into the streaming platforms themselves, as the streamers reveal data about their

10 Following this logic, the rofessional league for battle royale game H1Z1 made their players wear heart rate monitors. (Cameron 2018)

own body in the hope of gaining an advantage in the competition for the streaming audience's attention.

EYE TRACKING

In the case of eye-tracking interfaces, two possible use cases are advertised by manufacturing companies: the recording of eye movements for demonstration, analysis and training purposes, and the use of the eye-tracking hardware as a supposedly efficient input interface that can be operated intuitively and at a high speed. (Amazon 2020; Amazon 2020a)

Fig. 5: Use of eye tracking during game review of a COUNTER STRIKE match.

Following this pattern, the use of the technology in the context of esports commentaries can be interpreted as a way of simultaneously offering credibility to the players' skill, which is rendered visible by the device, and to the measuring apparatus itself; the latter being usually provided by a manufacturer of gaming hardware who also acts as the event's sponsor. However, insights gained from the eye tracking data rarely go beyond what the transmitted game image already conveys to the audience[11]: The measured player's focal point (see Fig. 5, light blue area at the bottom of the screen) usually jumps to the enemy characters during moments of

11 This finding seems trivial when one considers that the speed and precision of eye movements are reflected in the game actions that immediately follow them, meaning the movement and aiming processes.

confrontation, and otherwise moves back and forth between the interface elements relevant for gameplay, those being the counters for ammunition and health points. Eye tracking thus advertises an ideal of technically mediated visualizations of embodied knowledge as well as the hard- and software products brought to bear for this purpose. Crucially, it cannot deliver on the promise of visualizing concrete decision-making patterns and thus fails to improve the audience's understanding of the game.[12]

Fundamentally, the practices of visualizing and optimizing movement patterns can be seen in the tradition of scientific management's movement studies: For example, the eye movements depicted as ghostly traces are reminiscent of Frank Bunker Gilbreth's long-exposure film recordings for the analysis of work processes. (Hoof 2015) In the context of competitive gaming commentary, however, the practices of making bodily states and bodies of knowledge visible do not follow the telos of sequence optimization usually found in movement studies. Instead, they are employed in the service of an economically motivated affect modulation aimed at gaining and maintaining viewership numbers.

4. QUANTIFIED GAMEPLAY BETWEEN SELF-MEASUREMENT AND AFFECT MODULATION

It seems obvious to relate the quantification of gameplay to the overarching practices of a data-based lifestyle. The purposes also seem to be similar at first sight. Especially the sensors involved are comparable to those used in the Quantified Self movement (motto: "Self-Knowledge Through Numbers") and in the field of so-called personal informatics, (Lupton 2016; Abend/Fuchs 2016). Self-measurement activities with the help of digital sensors and mobile technologies such as smart watches can be considered modern, i.e. digital techniques of the self. (Foucault 1993, 26) These techniques of the self have a history that can be told along the

12 It is fair to say, however, that the shooter genre offers little room for surprising eye movements due to the focal point (the crosshairs in the center of the screen) being firmly inscribed in the game image. The situation is different in the strategy game, where a larger space, which is doubled once again by the mini-map, must be captured with the gaze.

changing ways we take care of ourselves and the media practices we employ to that end. In this context, self-observation through quantifying technologies is not to be seen so much in the tradition of (technologically supported) observations of consciousness and the mind but rather of medical practices that monitor vital functions and bodily responses. What most forms of self-measurement have in common is that this monitoring of vital functions is supposed to lead to an optimization of everyday routines in the sense of a healthier life.

Such somatization of everyday practices, where introspection refers not to work on the inner mental life but to self-engineering aimed at the body, can also be observed in quantified play. Consequently, the add-ons and peripherals used to computerize the game are primarily presented and marketed as performance-enhancing. In addition, monitoring is supposed to offer an unspecified enrichment of the gaming experience, which presumably appeals to the ideals of total control and efficiency commonly associated with the accumulation of data. At the same time, it promises a component of generating entertaining insights about one's own game – insights whose appeal might be grounded precisely in the fact that the game itself does not provide this kind of information.

Another commonality shared between the practices of quantified play and Quantified Self is the transformation from a "technology of the self" to a "technology of the social," (Lemke 2011) from self-measurement as an individual action to the sharing of acquired data with others (a functionality supported by the majority of commercially available tracking and tracing technologies). While terms such as self-tracking and personal informatics attribute self-monitoring to the sphere of private media use, the insights gained do not remain tied to the individual: Data is shared locally (with other members of the QA scene or with friends on social media) or circulates (semi-)publicly on digital platforms, some of which are provided by the technology providers.

Quantifying gaming also initially seemed a practice taking place exclusively between the user, the game, and the quantifying interface. However, since increasing one's own performance is also about creating comparability with other players, it is not surprising that practices of self-

measurement can be found in well-networked communities, especially in the field of competitive gaming. On streaming platforms such as Twitch, but also on statistics pages like Dotabuff, individual self-observation becomes a social technique of the body and can thus be understood as a form of dressage of the body. (Mauss 1974, 208)

Technologies of quantified play, such as the Naos QG mouse mentioned at the beginning of the text, represent a trend in digital gaming culture to monitor one's own performance on a small scale and to optimize it in order to increase efficiency. The manufacturers of quantifying hardware propagate that this is a way of reflecting on one's own gaming and thus also improving it. (Egliston 2020, 2) As a rule, this is done by means of visualizations that are displayed during gameplay or that can be accessed afterwards. This creates a second feedback loop to the game that adds further parameters to its output, allowing one's own playing to be adjusted to the displayed values. Depending on the genre and type of quantification, this adaptation can be done in quasi real-time or in a subsequent reflection phase. Ash speaks of an exteriorization of gameplay through proprietary tracking platforms. (Ash 2015, 109) According to him, the quantification of gameplay provides contextualization within an initially individual performance career. To exaggerate, one could say that by providing the tools to describe such careers, the corresponding measurement, documentation, and comparison technologies and practices make their existence possible in the first place. The decisive factor here are automatic documentation mechanisms that draw statistical connections between matches that exist separate from each other on a gameplay level. The selection and visual representation of the displayed data decisively influence how individual performance careers - and by extension one's own relationship to the games played - are perceived. The manufacturing companies exploit this connection in various ways. In the simplest case, absolute numerical values, which necessarily increase over time (e.g., the total number of games won), are placed prominently on the player's profile, while other – potentially demotivating – relative values (such as the percentage of games won) remain "hidden" in submenus. Here we can speak of targeted affect modulation on the part of the developers and

platform operators: The data is used as material to generate positive affective states, highlighting one's own skill development in particular, in order to encourage the continuation of one's gaming career. At the same time, negative affective states associated with personal mistakes and losses are cushioned by a narrative of long-term improvement against which failures take the shape of temporary set-backs.[13]

5. CONCLUSION

Quantification makes it possible to connect individual performance careers to larger digital economic contexts: The measurement data of quantified gameplay does not remain in the feedback loop between the game and the player but is displayed and adapted for (affective) economic purposes of players, manufacturers, and platform operators.

Fig. 6: Statistics banner in APEX LEGENDS showing the leading player. (Respawn Entertainment 2019)

In this regard, the collected playful metadata contribute in various ways to the formation and development of the material arrangements from which they emerge and in which they are embedded. For example, they can form the basis for adjustments to game balance or – visualized as a

13 Ben Egliston describes these mechanisms with the conceptual pair of proximity and distance. (Egliston 2020a, 10)

hybrid of in-game scoreboard and player profile – reinforce competition among players (see Figure 6).

By offering a trajectory for the professionalization of play, playful metadata undermine established notions of a strict separation of play and labor, (Huizinga 1956) contributing to the increasing diffusion of both spheres that is expressed in hybrid concepts such as "playbor" (Küklich 2005) and "laborious play" (Abend et al. 2016). Accordingly, the professionalization of play can be related to the gamification of work processes since both are underpinned by infrastructures and practices of measurement, quantification, and calculation. The permeability between private play-as-leisure and professional play-as-income that is inscribed into both streaming and professional play ensures that players become part of potentially exploitative structures of data aggregation from the get-go.

However, as the analysis of speedrunning practices has shown, playful metadata can also become an instrument for transgressive or transformative play, as provides metrics and goals not envisioned by the original developers.

By investigating the anchoring practices of sequencing, logging/calculating and visualizing, we have shown that the player's appropriation, development and refinement of gameplay actions and goals is mutually dependent on the (re-)formation of material arrangements. It is characteristic that the playful metadata collected by the players is simultaneously used for cooperative knowledge transfer (e.g., in speedrunning or in the fighting game community), but also for competitive comparison. Playful metadata enables communities of practice to jointly undertake the project of approaching their ideal of good gameplay, while it allows the players to compete more effectively with each other in individual games or races.

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ON THE REIFICATION OF GAME CULTURE USING THE EXAMPLE OF SHARING

How Multiple Social Practices Have Turned Into a Single Button

Timo Schemer-Reinhard

ABSTRACT

In 2013, Sony introduced a new interface element with the PS4 game controller DualShock 4: its own *share button*. The article uses this button to open up two thematic fields and bring them together. First, the *button* is discussed as a basic interface element. It is shown that technically mediated processes, which are to be triggered by buttons, must always have a strong conciseness and a high degree of enculturation. Second, *sharing* is discussed as a changing social practice. It is shown how practices of sharing have changed and differentiated under the conditions of digital networked media in general and in the context of play and games in particular. Against this background, the successful introduction of the PS4 share button shows that sharing in the context of digital games has achieved a level of conciseness and enculturation that is necessary for a button to function.

Keywords: PlayStation, controller, interface, button, social media

1. INTRODUCTION

Together with the Playstation 4 console (PS4), Sony introduced a new controller to the market in 2013 that featured a control element that was new for game controllers at the time: the "share button" (Fig. 1). The share button is used to share gaming-specific content; this text shows that such a (game-specific) practice of sharing is not without preconditions. This button can be seen as the culmination of a development that goes back to at least the 1980s. It was only through this long lead-in that the sharing of (game) content would reach such a high level of enculturation that it could be integrated into a game controller in the form of a single button.

Fig. 1: The PS4 controller with share button and (top right) typical social buttons. (Source: PlayStation Europe, with author's screenshot of social buttons.)

2. SWITCHES AND BUTTONS

A (push) button is one of the most basic forms of technology control of all. Buttons allow a simple yes/no or on/off distinction. A button can therefore be used to trigger technical devices or individual technology-based actions. The instruction 'Press button to...' can be completed almost arbitrarily. At first glance, everything that technology is capable of can be named here. On closer inspection, however, there are limits to this apparent arbitrariness (or flexibility). Buttons are only really practical and useful

as triggers for technical activities that have gestalt quality.[1] That which is to be triggered by pushing the button has to be comprehensible in advance as a self-contained entity. In other words, if you see a button whose function you do not immediately recognize, and you dare to experiment with pressing it, you will look attentively for an event that can be described in terms of "the button triggers XY." This says nothing about the actual technical complexity of what can be triggered by the press of a single button. We can use buttons to trigger a doorbell, for example, or to switch on a PC. In the case of the doorbell, there is still a 1:1 ratio between the operating activity (pressing the button) and the triggered technical action (ring tone). In contrast, from a technical perspective, switching on a PC actually triggers a highly complex cascade of many different individual technical actions. This is because nowadays we normally expect a PC not just to turn on, but also to automatically start its operating system and many associated utilities, and much more. We summarize this complex process with the term "boot up." This term describes the entire complex process that can be understood as a self-contained perceptual unit. We can then associate this perceptual unit with a single button as its trigger.

This allows us to draw a reverse conclusion: technical processes for which there are separate (extra) buttons are obviously culturally established as units of high *Prägnanz*[2] – otherwise these processes would not be associated with a button. The existence of certain buttons thus points to a high degree of enculturation of the associated, technically-based processes.

3. SHARING

The meaning of the term "sharing" has changed in remarkable ways over time. Originally, it denoted an act of dividing something into parts (John 2012, 45). This is directly related to the meaning in which the term also

1 For the terms "gestalt" and/or "gestalt quality" see e.g. Mulligan/Smith 1988.

2 According to the German Gestalt psychologist Max Wertheimer there is, "among several Gestalt laws of a general kind, a law of the tendency toward simple formation (law of the Prägnanz of the Gestalt) [...]" (Wertheimer as cited in Ash 1998, 133).

refers to the distribution of the individual parts produced by the previous division among several parties (ibid.). This concept of dividing is related to material goods. It is a zero-sum game: the gain of the person with whom I share something is equal to my own loss (ibid.).

This form of sharing is of great social importance. Sharing in this sense is a fundamental element of social interaction (Unger 2012, 131) that functions in many ways as a "basal unit of more complex cooperative processes." (ibid., 132)[3] It is constitutive for social relations, and it is normatively charged in three ways. Firth, referring to Mauss (1990[1954]), describes (a) "the obligation to give" (Firth 2011, 369), (b) "the obligation to receive" (ibid., 389) and (c) "the obligation to repay" (ibid., 395). This kind of sharing creates a relationship that is geared towards generating reciprocity. For the giving party, however, "an association of positive moral value" (ibid., 374) creates added value. This kind of sharing, in short, creates social relations.

More recently, however, there has not been a complete change in the meaning, but rather an expansion of the meaning. This expansion is essentially based on applying the term to immaterial goods or abstract objects that cannot be broken down into individual parts and/or that cannot be owned. Thus, for example, we speak of "sharing a room." In contrast to the previous, narrow concept of sharing, this usage emphasises the fact that the people involved are already in a relationship, a relationship that has to do with this form of sharing. For example, one can be in the same room with several people at the same time, but not speak of "sharing this room." This phrase tends to be chosen to express not only the objective fact of being present at the same time in the same room with someone else, but also the social dimension of this practice – the fact that this simultaneous presence is accompanied by specific relationships. Sharing of this kind is as much a cause as it is an effect of these relationships: When being together in a room, there may come a moment when one experiences oneself as being in community with the others present. From that

3 Orig. in German, translated by TSR; cf. also John 2012, 45.

moment on, one shares the room, and that also means: from that moment on, one is engaged in a social practice.

In this sense, abstract matters such as interests, hopes, faith, fears and more can also be shared. Just as one speaks of sharing an interest, hope, destiny, etc., one also speaks of community of interest, community of hope, community of destiny, and so on. A community of interest does not necessarily exist as soon as two or more people have the same interest(s); it develops when the people involved perceive this same interest as a relationship – and a basis upon which a community can be built: they understand the same interest as a shared interest that functions as a motive for cooperative action (John 2017, 27). This use of the term "sharing" means that social relationships already exist (and that these relationships are further stabilized by this specific practice of sharing).

Since around the middle of the 20th century, an additional use of the term "sharing" can be found that refers to an act of communication in which subjective feelings, especially emotions, are shared with other people (ibid.; John 2012, 46). The sharing of such intimate objects has a similar relationship-building effect as the sharing of material goods: "Similarly to the act of sharing a candy bar, the sharing of emotions also creates and regulates social ties." (John 2012, 46) Although relatively young, this mode of use has gained astonishing reach. According to John, this practice is "central to the formation and maintenance of intimate relations in contemporary western society." (ibid.) Looking at these different uses of the term "sharing," we see that the object of sharing changes over time. It moves from the purely concrete or material (food, things) to the abstract or immaterial (ideational goods) to completely internal subjective emotional states. One could also say: the object of sharing became more and more intimate and less and less objectively tangible. However, the new meanings of "sharing" do not replace the older ones at all, but the term becomes more and more ambiguous. For the purposes of further discussion, a distinction should be made between three different types of sharing:

1. The first type is based on divided property. Its object are material goods, it is based on their division and subsequent distribution of

the parts, and it functions as a zero-sum game. This generates social relationships.

2. The second type is about shared community. Here, ideational goods are shared that function as the basis of a community experience. These goods cannot be divided like those in the first type of sharing. Sharing within a shared community requires pre-existing social relations and stabilizes them. [4]
3. The third type of sharing has (co)shared inner states as its object. This form of sharing is based on communication, it is basically an act of information transmission. Naming such an act of communication as sharing emphasizes and intensifies the special emotional closeness and intimacy evoked by the actions of the people involved. In contrast to the previous type, this sharing does not necessarily require a pre-existing community, but it creates community. What this type of sharing has in common with the first type is that it generates social relationships but differs from it in that the shared good (e.g., feelings) cannot be divided or distributed.

This threefold distinction, however, only has the function of a heuristic instrument because it allows for specific perspectivizations in each case. Indeed, in current practices of sharing, all three modes of sharing can be at work at the same time, which is remarkable because they are partially mutually exclusive in terms of their conditions. These practices can be observed since about the year 2005 under the conditions of Web 2.0. Since then, it is not only the case that the transmission of content of any type (texts, sounds and images) is called "sharing," but it can also be observed that sharing is related to increasingly vague objects: "If at first the sites asked us to share photos, or Web journals, or thoughts, with time the objects of sharing began to include such vague things as 'your life,' 'your world,' and 'your true self.'" (John 2012, 47)

[4] In the German language, the word "mitteilen" has existed for several centuries; it is composed of the two words "mit" and "teilen." Literally translated, "mitteilen" actually means "to share with." However, it means "to tell." The German language has therefore been expressing a connection between communication and sharing for much longer than the English language.

This change has taken place at an astonishing speed, namely within a few years:

> "For instance, in 2002, the front page of the photo-sharing site Fotolog contained the text, "Make it easy for friends/family to see what's up with you. Put your latest, greatest digital photos on the Web in a log format." In 2007, though, it introduced the tagline, 'Share your world with the world.'"
>
> (ibid.)[5]

And finally, one can also increasingly observe that the object of sharing is not exactly specified at all: Catchy instructions like "Join! Connect! Share!" do not cause confusion because of the unclear order, but users obviously understand the (new) meaning of sharing in the new context of digital networked media.

This new context is characterized by the fact that, on the one hand, the content does not function any differently in perception than the corresponding objects did before in the analog world. Texts, sounds and images still appear as just that: texts, sounds and images. In perception, the technical basis is irrelevant. What we see is an image, for example. What we usually do not perceive is its medium. This has always been the functional principle of media, and for this principle it makes no difference whether the medium is a paper or a screen. Texts, sounds and images are objects of perception that as such – according to our perception – have the character of a thing (Lobinger 2012, 69). On the other hand, under the conditions of digitalization, these objects function quite differently from their analog counterparts because they can be copied and transmitted an infinite number of times:

[5] See also Dijck 2013, 48: "The contextual meanings of 'connectedness' and 'sharing' thus shifted from interaction inside the social network site to interaction with all virtual life outside Facebook's territory."

> "Finally, the advent of digital media seems to have really led to the collapse of original and copy. Digital data are, at the basal level, a sequence of zeros and ones. If one simply transcribes this sequence, or if a computer does so, the resulting file is exactly the same as the original file. In contrast to analog processes, here no copy loss signals a distance [...] between the original and the copy."
>
> (Schröter 2010, 11)[6]

Therefore, under digital conditions, texts, sounds and images no longer necessarily function like material objects, but they can also be treated like information. However, the property that changes as a result (e.g., their altered property in terms of their copyability) is not necessarily immediately apparent: On the surface, they still look like conventional objects, where sharing based on division and aimed at shared ownership has actually been impossible up until now. For example, a photo print on paper cannot be divided between two people like a piece of bread by cutting it in half. This division into two halves would destroy the photo. However, the new digital basis now allows images, as well as texts and sounds, to be shared by treating them as pure information. However, this process produces a copy of the image, which again has the character of a thing. This means that, as a result, both the giving and the receiving party are in possession of the shared good – and each in its entirety. Technically speaking, what has actually happened here is not sharing, but copying. Now, according to common opinion, a reproduction or copy is actually worth less than the original.[7] Copying is therefore rather negatively associated with loss. However, certain digitally networked media succeed in staging the underlying act in such a way that it is less reminiscent of the value-diminishing act of making a copy than it was reminiscent of the relationship-building act of sharing. This is based on the sophisticated hybridization of the three ways of sharing differentiated above:

1. First, media content with a thing-character is staged as an object that can be shared.

6 Orig. in German, translated by TSR.
7 See in detail Schröter 2010.

2. Secondly, (at the same time!) there is an emphasis on the community-creating way of sharing ideational goods (which are not divisible in the first sense): Analogous to "sharing a room," we can let others participate in the access to certain images, texts and sounds. In a sense, we thereby include these others in a "community of reception."
3. Third, the communication-based usage of sharing, which is actually based on the communication (in a technical sense: on the transmission) of internal states, is transferred to the transmission of information (e.g., digital images).

That is (also) why these media are called social media. Digital social media thus manage the feat of integrating the three modes of sharing as explained above: (a) sharing based on decomposition and distribution, which was not at all applicable to analog media content; (b) sharing in the context of a shared community, which is actually related to ideational goods; and (c) sharing based on communication, which is not actually applicable to objects with a thing-character. This integration has the consequence that the sharing practiced in social media is normatively charged in a special way because moments from all three previously mentioned types of sharing are effective at the same time. Such sharing generates social relationships and community, and it stabilizes pre-existing social relationships or communities. That is why sharing in digital networked media has a special dynamic.[8]

4. FORMS OF PRACTICE AND CULTURAL TECHNIQUES OF SHARING: FROM THE CHURCH COLLECTION TO THE LIKE BUTTON

Like exchanging, sharing is an anthropological constant (Lehmann/Ebert 2017, n. pag.). Practices of sharing can therefore be found in pre-modern

[8] About the great (economic as well as discourse-political) interest that companies such as Facebook have in these shifts in the meaning of sharing, see Dijck 2013, 48: "Changing the meaning of sharing turns out to be vital to altering legal rulings concerning privacy and to accepting new forms of monetization."

as well as in post-industrial societies (ibid.). Sharing is normatively and socially charged, which is why societies create and cultivate sharing-related rules, patterns of action, rituals and possibly even relevant institutions. At the macro level, for example, religious commandments can provide guidance regarding the socially expected amount of sharing (e.g., one-tenth of the harvest). At the meso level, institutions and associated rituals can be created to administer and organize the act of sharing (e.g., churches/parishes and collections). At the micro level, formalized behaviors and signs help to simplify and socially secure the interaction related to sharing (e.g., Katriel already observes the sharing of sweets between children as a "patterned, ritualized, cooperative gesture" (Katriel 1987, 307)).

Practices of sharing thus tend to become formalized at all levels. Actions formalized in this way form the basis of what could be termed *techniques of sharing*. *Techniques of sharing* abstract the act of sharing, therefore providing knowledge about procedures and methods that can then be transferred into tools/media. At this point at the latest, sharing has become a cultural technique in which formalized actions, tools, media and culture interpenetrate each other and jointly inscribe themselves in both individual and social actions.[9] On the basis of such cultural techniques, sharing can then potentially be practiced without having personally internalized all of the procedures or rules, possibly not even the applicable norms, because:

> "Media and things themselves provide rules for their execution. These 'material' instructions for action, in turn, come from a sphere that the person acting does not control. They control processes independently of the individual person performing them, which makes them repeatable - in other places, on other occasions, by different people. These actions are supported by a certain knowledge of action. This can be passed on to others, it can be learned. Repeatability and learnability are among the central characteristics of cultural techniques." (Vismann 2010, 175)[10]

9 The term "cultural techniques" (German: "Kulturtechniken") refers to "chains of operations that link humans, things, media and even animals. To investigate cultural techniques is to shift the analytic gaze from ontological distinctions to the ontic operations that gave rise to the former in the first place." (Siegert 2013, 48). For more details, see Siegert 2013.

10 Orig. in German, translated by TSR.

Facebook introduced an extraordinarily successful example of such "material instruction" in 2009 with the Like button. With this, the Facebook makers have succeeded in condensing acts of communicating, sharing, commenting, inviting as well as thanking (and presumably much more) into a single element "almost like an aphorism." (Jaekel 2017, 175)[11] While the Like button is not directly designed to *share*, its functionality has always been oriented towards an excessive culture of sharing that is vigorously pursued by Facebook. Thus, the commentary with which Facebook officially introduced the Like button in 2009 concludes with the sentence:

> "Your friends, and their photos, notes, statuses and more are what make Facebook great. When your friends share something great, let them know you like it."
>
> (Facebook 2009, n. pag.)

5. PLAY AND SHARE

Play is one of the above-mentioned "more complex cooperative processes"[12] that presuppose sharing as a basic operation. Playing together presupposes consensus about the nature of what is happening ("this is play" (Bateson 2000, 179), and in the play community established through play, time and rules as well as concrete game materials are then temporarily shared on an abstract level. The establishment of this consensus can function directly metacommunicatively (ibid.), but it can also come about through culturally established framing techniques. The most literal form of such framing techniques is probably given by standardized pitch markings (e.g., of a football pitch). These mark a space that is shared, on the one hand, but which is also often playfully wrestled over, on the other hand. In relation to this shared space, the players are then "bound by a spirit of hostility and friendship combined." (Huizinga 1949, 59) Basically, almost every standardized game material fulfils a comparable function. Game materials (cards, dice, boards; cf. Clüver in the same volume) in a sense call for them to be temporarily shared, and play is when this call

11 Orig. in German, translated by TSR.
12 See above chapter 3.

is complied with, and sharing correspondingly takes place.[13] Game materials are thus elements of cultural techniques as they have been described above. Now, the statement that game materials are elements of cultural techniques is in itself commonplace. However, the term applies here not only in a general sense, but also in a very specific sense: This is about material artefacts whose agency consist in the production of a (play) community through sharing. For example, a game material such as a dice is initially (correctly) regarded as a tool for generating chance and is therefore classified as an element of a cultural technique of playing. Beyond that, however, the dice constantly moves from one player to the other during the entire game. It can thus also be understood as an element of a (play-/game-)specific cultural technique of sharing – a sharing that acts as a constitutive moment for the establishment of (social) play.

However, games are typically not only based on community, but cleverly balance community with competition. Furthermore, in the context of competition, sharing can play an important role: At first glance, sharing (like giving) seems to be of a purely altruistic nature because it denotes an act of giving without direct reciprocal compensation. However, Huizinga, for example, derives "the agonistic basis of cultural life in archaic society" from gift-giving customs. Accordingly, receiving a gift obliges the party receiving the gift to give a counter-gift. Here it is also worth mentioning the above-mentioned quote by Firth: "the obligation to repay." (Firth 2011, 395)[14] This counter-gift must be at least of equal value to the preceding one, in the contexts described by Huizinga, they must even be more valuable. Then a dynamic emerges in which everything "hinges on winning, on being superior, on glory, prestige and, last but not least, revenge." (Huizinga 1949, 59) The seemingly altruistic act of giving thus constitutes a dialectical structure of relationships in which both parties are "bound by

13 This is not to say that play can only take place in a community. Of course, there are forms of play that take place entirely independent of a community (e.g., everything that Caillois (2001[1961]) refers to with the term ilinx), but this text is about the function and cultural transformation of sharing as a potential moment of play. Therefore, only those forms of play are discussed here in which this moment is relevant.

14 Firth is referring to Mauss 1990[1954].

a spirit of hostility and friendship combined" (ibid.) as already quoted above. This Janus-faced relational momentum is not only inherent in every act of giving, but it also affects sharing – clearly, at any rate, insofar as the sharing of material goods is concerned. However, because the boundaries between material goods and communication become blurred under the conditions of digital networked media (see above), such mechanisms can also become effective in the sharing of (digital media) content. In the context of computer game culture, this happens, for example, when game recordings or even achievements are shared virtually with friends. According to the logics derived above, such an act of sharing not only generates and stabilizes purely harmonious social relations, but in a sense, it also challenges a response, a quid pro quo, that appropriately trumps the original material. A competition emerges that is borne by a "spirit of hostility and friendship combined." (ibid.) This competition is at the core of a "second game" (Jakobsson 2011) or a "metagame" (Salen/Zimmerman 2003, 481), it's the object of which is the sharing of evidence for ever greater (game) achievements.

6. FROM SHARING AS A COMPLEX ACTION TO BUTTON-PUSHING: SONY'S SHARE BUTTON

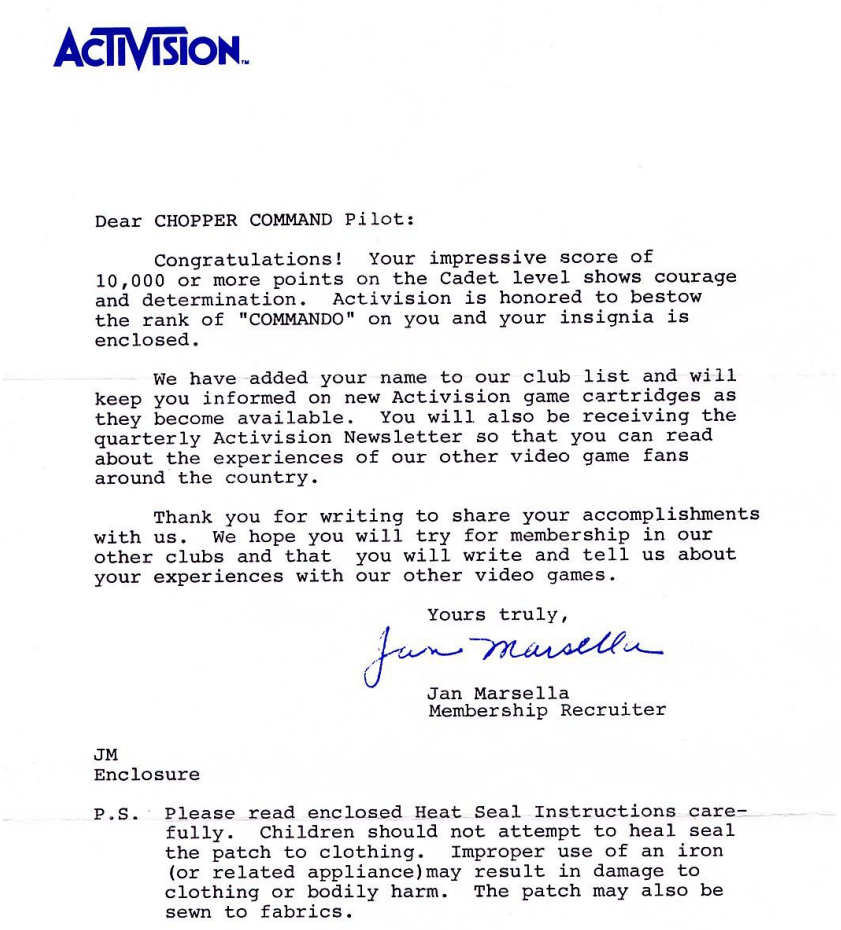
There is a history of proving achievements gained in games that goes far beyond the digital age. Since time immemorial, cups, medals, certificates, point systems, high score lists and more have been used for this purpose. The publisher Activision in particular transferred such practices to digital games as early as the beginning of the 1980s: Players were encouraged to take photos of the television screen to capture certain scores and send these photos to the company headquarters. A few weeks later, they then received a patch tailored to the respective game and performance from the publisher by mail (Fig. 2).

Fig. 2: Patch awarded for 10,000 points in the game CHOPPER COMMANDS. (Source: https://atarinerds.tumblr.com/post/133426951/xplanes-sunday-fantasy-88-activision-atari-2600, accessed 27 May 2022)

In addition, these deliveries were always accompanied by a letter (Fig. 3). The letter usually begins by referencing the specific feat that the player had accomplished in the game. In the next paragraph, players were informed that they had been added to the so-called "club list." This meant that in the future they would receive promotional material and a quarterly (paper) newsletter. According the letter, this newsletter was meant to enable participation in the gaming experiences of other computer gamers: "[...] you can read about the experiences of our other video game fans around the country." Finally, the following paragraph literally led to the topic here, because here the player was explicitly thanked for sharing their achievements with the publisher: "Thank you for writing to share your accomplishment with us." The paragraph usually ended with an encouragement to strive for further participation in the future (again by letter).

Activision's fabric patches are a particularly ambitious variant of a strategy that was implemented in various ways by many companies in the video game industry in the 1980s and 1990s. For example, in the early 1990s, Nintendo players could use the same principle (sending in a paper photo of a high score on screen by letter post) to get their name published in the high score list in *Nintendo magazine*.

With the spread of the Internet, various high score websites emerged towards the end of the 1990s that fulfilled the same function – albeit under partly easier conditions because it became possible to take a screenshot on a PC and uploads and e-mail replaced traditional mailing.



ACTIVISION.

Dear CHOPPER COMMAND Pilot:

Congratulations! Your impressive score of 10,000 or more points on the Cadet level shows courage and determination. Activision is honored to bestow the rank of "COMMANDO" on you and your insignia is enclosed.

We have added your name to our club list and will keep you informed on new Activision game cartridges as they become available. You will also be receiving the quarterly Activision Newsletter so that you can read about the experiences of our other video game fans around the country.

Thank you for writing to share your accomplishments with us. We hope you will try for membership in our other clubs and that you will write and tell us about your experiences with our other video games.

Yours truly,

Jan Marsella

Jan Marsella
Membership Recruiter

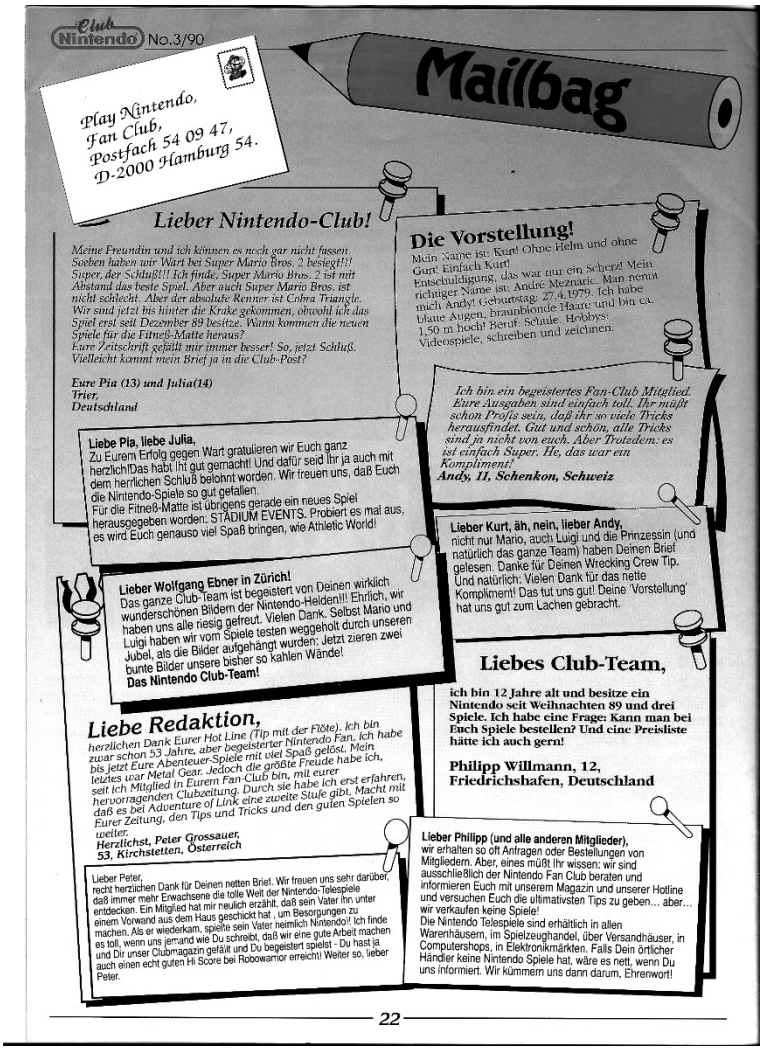
JM
Enclosure

P.S. Please read enclosed Heat Seal Instructions carefully. Children should not attempt to heal seal the patch to clothing. Improper use of an iron (or related appliance)may result in damage to clothing or bodily harm. The patch may also be sewn to fabrics.

Fig. 3: Letter from "Activision" attached to the patch.
(Source: Navigationen 20/1, 2020. Siegen: universi - Universitätsverlag Siegen, p. 105. DOI: http://dx.doi.org/10.25819/ubsi/3590.)

In all of these cases, a third party (the publisher, a magazine, a website) acted as an intermediary between the players. The players could not directly enter into a "sharing relationship" with each other, they had to interact with the intermediary, who would subsequently redistribute the good to be shared. The immediacy lacking in this approach could only be countered by emphatic staging. That is why Activision always addressed

its customers very directly and personally in the above-mentioned letters and tried to evoke a community experience in a discursive way. Magazines such as the aforementioned *Nintendo magazine* also worked with these strategies and typically used rubrics in which self-presentations of players and interaction between editors and players were printed (Fig. 4). In this context, Activision's patches were a clever trick to give players the opportunity to present their special gaming achievements, not only indirectly by being mentioned in a magazine or the like, but also physically and directly among their own friends.


Club Nintendo No.3/90

Mailbag

Play Nintendo,
Fan Club,
Postfach 54 09 47,
D-2000 Hamburg 54.

Lieber Nintendo-Club!

Meine Freundin und ich können es noch gar nicht fassen. Soeben haben wir Wart bei Super Mario Bros. 2 besiegt!!! Super, der Schluß!!! Ich finde, Super Mario Bros. 2 ist mit Abstand das beste Spiel. Aber auch Super Mario Bros. ist nicht schlecht. Aber der absolute Renner ist Cobra Triangle. Wir sind jetzt bis hinter die Krake gekommen, obwohl ich das Spiel erst seit Dezember 89 besitze. Wann kommen die neuen Spiele für die Fitneß-Matte heraus?
Eure Zeitschrift gefällt mir immer besser! So, jetzt Schluß. Vielleicht kannst mein Brief ja in die Club-Post?

Eure Pia (13) und Julia(14)
Trier,
Deutschland

Liebe Pia, liebe Julia,
Zu Eurem Erfolg gegen Wart gratulieren wir Euch ganz herzlich!Das habt Ihr gut gemacht! Und dafür seid Ihr ja auch mit dem herrlichen Schluß belohnt worden. Wir freuen uns, daß Euch die Nintendo-Spiele so gut gefallen.
Für die Fitneß-Matte ist übrigens gerade ein neues Spiel herausgegeben worden: STADIUM EVENTS. Probiert es mal aus, es wird Euch genauso viel Spaß bringen, wie Athletic World!

Die Vorstellung!
Mein Name ist: Kurt! Ohne Helm und ohne Gurt! Einfach Kurt!
Entschuldigung, das war nur ein Scherz! Mein richtiger Name ist: André Meznaric. Man nennt mich Andy! Geburtstag: 27.4.1979. Ich habe blaue Augen, braunblonde Haare und bin ca. 1,50 m hoch! Beruf: Schüler. Hobbys: Videospiele, schreiben und zeichnen.

Ich bin ein begeistertes Fan-Club Mitglied. Eure Ausgaben sind einfach toll. Ihr müßt schon Profis sein, daß Ihr so viele Tricks herausfindet. Gut und schön, alle Tricks sind ja nicht von euch. Aber Trotzdem: es ist einfach Super. He, das war ein Kompliment!
Andy, 11, Schenkon, Schweiz

Lieber Kurt, äh, nein, lieber Andy,
nicht nur Mario, auch Luigi und die Prinzessin (und natürlich das ganze Team) haben Deinen Brief gelesen. Danke für Deinen Wrecking Crew Tip. Und natürlich: Vielen Dank für das nette Kompliment! Das tut uns gut! Deine 'Vorstellung' hat uns gut zum Lachen gebracht.

Lieber Wolfgang Ebner in Zürich!
Das ganze Club-Team ist begeistert von Deinen wirklich wunderschönen Bildern der Nintendo-Helden!!! Ehrlich, wir haben uns alle riesig gefreut. Vielen Dank. Selbst Mario und Luigi haben wir vom Spiele testen weggeholt durch unseren Jubel, als die Bilder aufgehängt wurden: Jetzt zieren zwei bunte Bilder unsere bisher so kahlen Wände!
Das Nintendo Club-Team!

Liebes Club-Team,
ich bin 12 Jahre alt und besitze ein Nintendo seit Weihnachten 89 und drei Spiele. Ich habe eine Frage: Kann man bei Euch Spiele bestellen? Und eine Preisliste hätte ich auch gern!

Philipp Willmann, 12,
Friedrichshafen, Deutschland

Liebe Redaktion,
herzlichen Dank Eurer Hot Line (Tip mit der Flöte). Ich bin zwar schon 53 Jahre, aber begeisterter Nintendo Fan. Ich habe bis jetzt Eure Abenteuer-Spiele mit viel Spaß gelöst. Mein letztes war Metal Gear. Jedoch die größte Freude habe ich, seit ich Mitglied in Eurem Fan-Club bin, mit eurer hervorragenden Clubzeitung. Durch sie habe ich erst erfahren, daß es bei Adventure of Link eine zweite Stufe gibt. Macht mit Eurer Zeitung, den Tips und Tricks und den guten Spielen so weiter.
Herzlichst, Peter Grossauer,
53, Kirchstetten, Österreich

Lieber Peter,
recht herzlichen Dank für Deinen netten Brief. Wir freuen uns sehr darüber, daß immer mehr Erwachsene die tolle Welt der Nintendo-Telespiele entdecken. Ein Mitglied hat mir neulich erzählt, daß sein Vater ihn unter einem Vorwand aus dem Haus geschickt hat , um Besorgungen zu machen. Als er wiederkam, spielte sein Vater heimlich Nintendo!. Ich finde es toll, wenn uns jemand wie Du schreibt, daß wir eine gute Arbeit machen und Dir unser Clubmagazin gefällt und Du begeistert spielst - Du hast ja auch einen echt guten HI Score bei Robowarrior erreicht! Weiter so, lieber Peter.

Lieber Philipp (und alle anderen Mitglieder),
wir erhalten so oft Anfragen oder Bestellungen von Mitgliedern. Aber, eines müßt Ihr wissen: wir sind ausschließlich der Nintendo Fan Club beraten und informieren Euch mit unserem Magazin und unserer Hotline und versuchen Euch die ultimativsten Tips zu geben... aber... wir verkaufen keine Spiele!
Die Nintendo Telespiele sind erhältlich in allen Warenhäusern, im Spielzeughandel, über Versandhäuser, in Computershops, in Elektronikmärkten. Falls Dein örtlicher Händler keine Nintendo Spiele hat, wäre es nett, wenn Du uns informiert. Wir kümmern uns dann darum, Ehrenwort!

22

Fig. 4: Excerpt from the Nintendo PR magazine "Club Nintendo" (1990). (Source: Nintendo Magazine. 1990, H. 3, p. 22.)

On today's gaming platforms, corresponding functions have been integrated in a standardized way. Modern achievement systems automatically detect defined achievements, they then automatically award the corresponding – now only virtual – prizes and they also enable the automatic transmission of these (and other) achievements to players connected via social web functions, such as through a friends list. As a result, the intermediary that was interposed between the different players in the past has faded away in the perception of the users, so that an impression of direct exchange is created. The players no longer communicate with the publishers or a magazine (which may act as distributors in the next step), but the players interact – at least in their experience – directly with other players. In concrete terms, this means that the players no longer share their experiences with abstract entities, but they share directly with their friends.

This automation means that taking screenshots is no longer necessary, at least not to prove the success of a player. Nevertheless, screenshots – and also video recordings – still fulfil useful functions in the sense discussed here. While achievements and similar elements only provide indirect information about the actual actions of the players, screenshots and even more video recordings open up the possibility of letting outsiders participate much more directly in one's own actions in the game. Until recently, this was mainly done via video platforms such as Youtube, which, however, again required intermediate steps that were technically relatively complex. In the latest console generations, these functionalities have also been increasingly integrated.

In the sense of the concept of techniques of sharing as presented in chapter 4, it can thus be summarized that in the field of gaming, sharing has become a specific cultural technique: Procedures, tools and media have been established with which actions associated with sharing can be practiced. The procedures that emerged in the beginning were still highly fragmented in terms of space and time and also had to rely on external tools (camera, letters, patches). Over time, however, these external tools have been increasingly standardized and technically integrated directly

into the gaming devices and interfaces (consoles, controllers, screen design, etc.), so that sharing in gaming contexts is now a relatively clearly defined option for action that has gestalt quality. It can also be summarized that the gaming-specific forms of sharing that derive from this are based on an ambivalent interweaving of competition and participation. The emphatic accentuation of this overall action as sharing has the potential to positively mask the (thus potentially normatively problematic) moment of this action associated with competition and confrontation. This is why the games industry continues to pursue precisely this strategy.

With the DualShock 4 controller, which came onto the market in 2013 together with the PS4, this strategy finally took the next step – which seems logical in light of the considerations outlined at the beginning of this text. The DualShock 4 controller has its own push button, which is labelled "SHARE" (Fig. 1). This button combines all of the variants of metagame action as mentioned above in a single interface element: the taking of screenshots and video recordings, the proliferation of these screenshots and video recordings, the associated emergence and maintenance of social relationships and the creation of metagame-based competition. Whereas in the past the player had to do the sharing themselves in a series of several steps, it is now (exaggeratedly formulated) only triggered with the push of a button. The share button is a material instruction for action, and the processes triggered by it generally function independently of the individual person performing the action. The fact that this is possible at all is due to a development that began in the 1980s at the latest, and which has since been characterized by a movement towards standardization and integration, and which has also been flanked by equivalent developments in fields that are not directly related to play or games, especially in social networks. The developments in the field of gaming were obviously so specific that it is now immediately clear what can or should be shared with whom – and how – when a corresponding button is available. This contribution has shown that in current gaming contexts, sharing denotes a very specific form and practice that has been standardized and summarized in several steps over the course of three decades, which finally culminated

in one single button. This button is in a sense the (current) endpoint of a long process of reification of game culture.

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STEAM AND THE PLATFORMIZATION OF VIRTUAL GOODS

An Analysis of the Weapon Skin Economy in COUNTER-STRIKE: GLOBAL OFFENSIVE

Tim Glaser

ABSTRACT

Random reward mechanisms, such as loot boxes, crates and cases, have been increasingly implemented by computer game companies to monetize additional content. These mechanisms have been wildly criticized, especially for being addictive and a digital form of gambling. This paper, however, analyzes the phenomenon from a media-economic and cultural studies perspective in order to determine to what extent random-based reward mechanisms can be regarded as a platformization (according to Helmond, Niebog and Poell) of computer game culture. This connection is exemplified by the weapon skin economy in COUNTER-STRIKE: GLOBAL OFFENSIVE. The economy consists of virtual goods (skin cases and weapon skins) that can be acquired, exchanged and traded via the platform Steam. Additionally, the labor of users is commodified in the process: the creation of user-generated content (modding) is monetized, on the one hand, and the distribution and evaluation of the content is centralized via Steam, on the other. The analysis of the weapon skin economy thus makes it possible to focus on the entanglement of labor, play and economization.

Keywords: platformization, virtual goods, weapon skins, Steam, Counter-Strike

1. BLACK MARKET WEAPONS TRADE AND VIRTUAL GOODS

> "Introducing the Arms Deal Update, which lets you experience all the illicit thrills of black market weapons trafficking without any of the hanging around in darkened warehouses getting knifed to death."[1]

When Valve promised its customers the exciting world of black market arms trading in August 2013, no one knew that only a few years later illicit trading of weapon skins in COUNTER-STRIKE: GLOBAL OFFENSIVE (2012)[2] would become the subject of actual legal disputes. With the Arms Deal Update, Valve not only introduced skins, but also a random reward mechanism (Nielsen/Paweł 2018, 6). This allowed players to receive virtual goods, known as skin cases. After paying for a key to unlock such a case, players receive a random weapon skin. Each equipped skin in turn changes the appearance of a weapon within the virtual world in its own way - and can thus be used for self-expression and individualization. However, skins do not affect mechanics or other aspects, such as weapon damage. Additionally, skins can be offered for trade or barter via Valve's distribution platform Steam, potentially fetching high prices due to scarcity and various levels of rarity. This combination of esthetic and subjective incentives, random rewards, and an economic marketplace led to the establishment of a complex weapon skin economy.

CS:GO is not an isolated case; various multiplayer and competitive games in particular use similar random-based reward mechanisms to monetize various virtual goods and retain customers. Famous examples include OVERWATCH (2016), STAR WARS: BATTLEFRONT II (2017), FORTNITE (2017), EA titles using the Ultimate Team mode, and innumerable mobile games. However, the mechanisms are implemented differently by the companies. On the one hand, a distinction can be made between virtual goods, such as skins, which exclusively influence the appearance (of weapons, characters, etc.), and items that more directly influence game

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1 For the full announcement, see https://blog.counter-strike.net/index.php/2013/08/7444/ [last access: 20.05.2021].

2 In the following, Counter-Strike: Global Offensive will be abbreviated as CS:GO.

rules, for example, by changing weapon damage or other values. This is illustrated, for example, by the controversy surrounding microtransactions in STAR WARS: BATTLEFRONT II: The game was criticized by fans and journalists for allowing players to buy advantages in a multiplayer title.[3] On the other hand, there are distinctions in regard to limitations of the trade and sale of virtual items; for example, in contrast to CS:GO, in OVERWATCH virtual goods are directly tied to the player's account and cannot be exchanged. Despite these different approaches, there are similarities in regard to the use of probability distribution. In the majority of games, virtual goods are divided into different categories, which in turn creates artificial scarcity. As a result, rare items sometimes acquire a high collector's value,[4] this attribution of value leads to their use in gambling and betting, among other things.[5]

Over the course of the popularization of these random-based reward mechanisms, which, depending on the game, are called cases, crates, packs, loot boxes[6] or something similar, the ethical and legal implications were increasingly debated from 2016 onwards. Following these discussions, loot boxes were first banned in Belgium, the use of virtual goods for gambling was prohibited in the Netherlands, and various provider sites were blocked in Denmark (Danish Gambling Authority 2017). Other countries, including England and New Zealand, continue to allow these mechanisms, but regulate them. In the U.S., there are various political initiatives

3 The main criticism was that Star Wars: Battlefront II used so-called Pay2Win mechanisms. Pay2Win describes games in which purchased virtual goods have a direct influence on the gameplay, for example, by increasing certain values or unlocking additional options. The criticism led to various changes to the game, among other things. For a chronological overview of the controversy see Jackson 2017.

4 Comparisons can be drawn to tradable collectible card games, such as Magic: The Gathering (1993-), especially in the relationship between virtual goods and the increase in value of rare and sought-after cards.

5 The topic of gambling and betting is further explored in section 3.2.

6 The term loot box, or lootbox, has become the most commonly used generic term for the different random reward mechanisms. In this paper I will use this term in its more general meaning.

that have not yet achieved concrete results. Loot box mechanisms, especially simulated gambling in sports series, are increasingly being criticized in Germany.[7]

The phenomenon has attracted increased attention in recent years, which has led to a number of psychological, legal and sociological-empirical studies in recent years. Topics such as motivation, addiction through gambling and legality are in the foreground (Frieling 2017; Holden/Ehrlich 2017; Martinelli 2017; Zendle/Cairns 2018; Macey/Hamari 2018). However, even though these are important perspectives, the studies remain one-sided, focusing on the individual subject and media effects. This paper complements this by examining the so-called weapon skin economy from a perspective that combines media cultural studies, discourse analysis, and media economics (Nohr 2008; Nichols 2014; Ruggill/McAllister/Nichols/Kaufman 2016). In doing so, the weapon skin economy in CS:GO offers an example to trace the relevance of chance-based reward mechanisms and the effect of commodification of user-generated content. First, the cultural history of modding will be discussed in order to elaborate on the specific function of Valve's own distribution platform Steam. Then, the exemplary analysis with help inform reflections and theses on the transformation of labor and play.

2. MODDING AND STEAM AS A PLATFORM

Modding refers to the media practice of changing, adapting or expanding commercially published computer game, this takes place in online communities as a collaborative process (Sihvonen 2011; Sotamaa 2010). In the mid-1990s the practice of modding became a legal form of participation, through the acceptance by companies. Relevant for this was, among others, id Software, which – influenced through their publications and company policy – made changes that enabled the establishment of modding

[7] For example, there was criticism of the fact that the latest release of the popular sports series NBA 2K (1999-) received an age rating of 0 years by the USK (Unterhaltungssoftware Selbstkontrolle, the organization in Germany responsible for video game ratings) although it has visual and mechanical similarities to gambling. See, among others, Herbig 2019.

as well as machinima and speedrunning.[8] For DOOM (1993), Carmack and Romero – who report having enthusiastically hacked and appropriated games themelves in their youth – changed the internal organization of the software (Kushner 2004; Knorr 2012b). Individual elements, such as levels and textures, became editable and changeable without having to overwrite the actual code. In addition, the free distribution of self-created content was allowed, initially through tacit acquiescence, which was later transformed into corresponding End User License Agreements.

COUNTER-STRIKE (1999) also owes its existence to this open model of interaction, which brought relative freedom for modders and benefits for companies.[9] Building on Valve's HALF-LIFE (1998), COUNTER-STRIKE became one of the most popular multiplayer games of its time. COUNTER-STRIKE was not only a modding project itself, but was further enhanced by fans and players with additional content. This mainly included new maps, skins for weapons and avatars, but also minor changes to the interface, textures and sound effects. This content was in turn distributed, evaluated and further developed on various unofficial sites.

Valve not only hired the developers of *Counter-Strike*,[10] developing further successors to the game in the following years, but also created Steam in 2003, a platform tailored to the distribution of games. Steam quickly established itself as the most important and influential market

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8 Speedrunning refers to the activity of playing through a computer game as quickly as possible. Depending on the title, there are different categories that specify the exploitation of glitches or additional conditions. The term machinima refers to the combination of machine and cinema, the term is used for videos created with the help of computer games or using real-time game engines. Doom, for example, allowed the recording of so-called demos (.DEM-files), which stored keyboard and mouse inputs and could later replay the gameplay. This allowed new formats, such as speedrunning, machinimas or trickjumping, to be made available to an ever-growing and networked audience before video platforms such as YouTube existed.

9 End User License Agreements (EULA) brought advantages to the companies in particular, as Newman (2008) writes: "the EULA places the creative and productive act of modding into an institutionalized context that is heavily weighted in favor of the commercial developer." (ibid., 175).

10 Valve also incorporated other modding projects. Team Fortress 2 (2007) is based on a mod originally developed for Quake. IceFrog, a custom map designer for Warcraft III: Reign of Chaos (2002), was later employed for Dota 2 (2013). And in 2019, Valve released Dota Underlords, their first mobile game, which itself was based on a popular Dota 2 custom map.

platform for selling video games, distributing additional content and establishing communities, as well as for the further economization of gaming culture.[11] The Steam Workshop, which was introduced in 2011, enabled users to publish and distribute content they had created themselves, such as mods, skins and maps. Originally modeled after TEAM FORTRESS 2's Mann Company Store, the system was opened up to other games the following year. Castronova (2014) describes Steam as the fusion of traditional forms of user-generated content with the model of platform capitalism. On the one hand, Steam allows games to be purchased, updated and enhanced with official content, such as add-ons and other downloadable content, via the Steam wallet.[12] On the other hand, unofficial content can also be distributed via the workshop and community market.

The establishment of Steam can be understood as an example of the platformization of cultural production as understood by Helmond (2015), Niebog and Poell (2018). Helmond defines platformization as the rise of platforms as dominant infrastructures of the Internet, as well as the enforcement of social media exploitation models based on opaque data generation. This leads to an unequal relationship between extension and centralization, which Helmond (2015, 8) refers to as the "double logic of platformization". On the one hand, platforms offer interfaces and technological frameworks that are as universal as possible, creating the possibility of participating and posting one's own content, while the data obtained from all these interactions, for example, behavioral profiles, are stored, processed and monetized in a centralized way, on the other hand. Based on this, Niebog and Poell analyze the influence of platformization on cultural production:

> "Platformization can be defined as the penetration of *economic*, *governmental*, and *infrastructural extensions* of digital platforms into

11 "At the most general level, platforms are digital infrastructures that enable two or more groups to interact. They therefore position themselves as intermediaries that bring together different users: customers, advertisers, service providers, producers, suppliers, and even physical objects." (Srnicek 2017, 43).

12 The Steam Wallet is Steam's own virtual account linked to one's profile. Since funds cannot be withdrawn from the wallet, money once deposited remains within the Steam economy and virtual possessions can therefore theoretically only circulate within it.

> the web and app ecosystems, fundamentally affecting the operations of the cultural industries."
>
> (Nieborg/Poell 2018, 2; emphasis in original)

The production and distribution of additional game content is centralized, controlled and monetized by Valve's platform Steam, as will be shown with reference to CS:GO. Thus, a platformization of the practice of modding is taking place. Virtual goods are particularly suitable for this platformization, as they are "contingent" goods. Niebog and Poell use the term contingency to refer to two interconnected properties. On the one hand, the fact that the production and distribution of (virtual) goods is increasingly dependent on platforms, which in turn operate with profiles and surveillance and thus manage access. On the other hand, they use contingency to describe the relative openness of computer games[13] and virtual goods, which can be adapted through their inconsistent and modular design, for example, through the practice of modding.[14]

In the following, I will use the concrete example of CS:GO to trace how Valve used their platform Steam to integrate players into the weapon skin economy. I will examine the platformization of the virtual weapon skins, meaning the production, valuation and circulation of these within the community controlled by Valve, as well as the use of weapon skins for gambling and betting in external platforms.

3. WEAPON SKIN ECONOMY IN COUNTER-STRIKE: GLOBAL OFFENSIVE

At the Game Developers Conference in 2014, Bronwen Grimes (2015), technical artist at Valve, held a presentation on the topic of weapon skins in CS:GO. Her team discussed the possible ramifications of introducing different virtual goods, including the implementation of new weapons and

13 See Newman (2012) on computer games as unstable artifacts.

14 Computer games are fundamentally dependent on platforms (for example: operating system, console, app store) and so it stands to reason that the design of games is influenced by the possibilities of marketing virtual goods on platforms: "Game developers leverage the contingent nature of games as software by continuously altering, extending, and upgrading game content and functionalities, while simultaneously optimizing its monetization model." (Nieborg/Poell 2018, 10).

playable characters. Weapon skins were ultimately chosen because skins mainly change the visuals, but only have a limited impact on gameplay. Since weapon skins are visible for both the player and their fellow players, the social component is also increased. The textures of the weapons were comparatively easy to change for modders from the community. Valve wanted to unite their user base, which was scattered across four different iterations of *Counter-Strike*, with the introduction of weapon skins (and the associated reward and distribution mechanisms) in the latest version of the game (Lahti 2015). Finally, the goal of the Arms Deal Update was to build on these new virtual goods to create a robust economy that could be monetized.[15]

As stated above, most weapon skins are distributed via skin cases.[16] Cases are randomly distributed to game players and can then be opened with a virtual key or traded in Steam on the community market. Keys are in turn sold directly by Valve; such keys currently cost around at least $2.50.[17] The cases are the CS:GO variant of a random-based reward mechanism. So-called souvenir packages were distributed for the first time in the context of the DreamHack 2013 e-sports tournament. After connecting their Steam account to the streaming platform Twitch, viewers of the Valve-sponsored tournament could obtain rare weapons by watching the e-sports competitions. Such souvenir skins also have four stickers[18] – one of each of the two teams currently playing, the tournament itself, and the game's most valuable player – and were therefore highly sought after.

15 Valve's increased interest in virtual economies was evident when the company hired Yanis Varoufakis as economist-in-residence in 2012 to study how markets can be successfully integrated into games with the aim of helping the longevity of a given video game.

16 Weapon skins can also be obtained randomly after a regular round of CS:GO, but this is limited to a set number per week; moreover, it is not possible to obtain rare skins this way. See Martinelli 2017, 559.

17 Deals on the community market for CS:GO vary widely, depending on rarity. Older keys can be significantly more expensive. For recent listings, see: https://steamcommunity.com/market/search?appid=730 [last access: 20.05.2021].

18 Stickers can be virtually "stuck" on weapon skins and, along with sprays, are among other forms of virtual goods that Valve introduced in later CS:GO updates.

Originally, only cases were released that included skins designed by Valve. Later, e-sports cases were added, as well as community cases, which mainly determine the current virtual economy. Skins are categorized into five different rarities.[19] The most common category, Mil-spec, is distributed at a rate of 79.92%. The probability of encountering a valuable knife, on the other hand, is only 0.26%. In addition, there are other factors, such as the quality, different patterns[20] and the StatTrak[21] trait, which determine the frequency of occurrence and the value of the weapon skin. The mechanics of skin acquisition and variance can be described as deliberately opaque and confusing. The price range is wide: while frequent skins can potentially go for just a few cents on the market, the various gradations and additional features increase the rarity of certain weapons and thus the potential value attribution. In particular, knives with certain color transitions or souvenir skins from the finals of a popular tournament are offered and purchased for tens of thousands of U.S. Dollars.[22] In contrast to the cost of skin cases and keys on the market, these potentially high profit opportunities significantly influence the success of the weapon skin economy. To examine this in more detail, I will now analyze production, valuation and then external markets.

3.1 PRODUCTION, VALUATION AND GAMING CAPITAL

Valve provides the Workshop Workbench, software that enables users to create so-called finishes, which are textures that form the basis for the

19 The probabilities could only be estimated for a long time, until Valve had to make the distribution public for the Chinese market in 2017. Within the community, various quite accurate estimated distributions circulated. Among others Onscreen's statistics, which proved to be very accurate in retrospect, see: https://www.reddit.com/r/GlobalOffensive/comments/3cly6c/case_statistics_spreadsheet_of_all_6000_cases/ [last access: 20.05.2021].

20 Some weapon skins have different random-based variations, such as different color schemes or the number of nets on the Crimson Web skin for knives.

21 StatTrak shows how many kills have been made with the weapon, which is an addition feature that 10% of all weapon skins contain.

22 For example, in 2018 a Souvenir Dragon Lore weapon skin for the AWP weapon was sold for $61,052.63, see https://www.polygon.com/2018/1/30/16952248/counter-strike-global-offensive-dragon-lore-skadoodle-skin-sale-opskins [last access: 20.05.2021].

skins integrated into the game. There are various patterns to choose from, which are inspired by real weapon modifications, such as hydro-dipping or spray-painted camouflaging.[23] The first community case, the Winter Offensive Weapon Case, was launched in December 2013. To date, well over one hundred thousand finishes have been uploaded by users on Steam, and almost 300 of them have been integrated into the game by Valve.[24] According to designers, more than $40,000 are paid out per skin. [25] And according to its own data, Valve paid out about $57 million to modders via Steam between 2011 and 2015.[26]

The labor of a weapon skin designer consists not only in creating esthetically pleasing textures, but also extends to advertising and marketing. For this purpose, social media sites such as Reddit, Facebook and Twitter are used and even videos are created that exhibit the esthetic features of a particular skin.[27] This is used to compete for the attention of the community, which helps to decide which proposed textures will be included in CS:GO. Finishes are categorized using different assessment practices:

> "*Valorization*, which creates, increases or decreases the value status of content or actor; *evaluation*, which captures and classifies value status; and *purchase*, where the price paid symbolizes the value of the product."
>
> (Hutter 2018, 23; emphasis in original, own translation)

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23 In addition to the free Workbench, designers also use professional game design software.

24 Finishes in the Steam Workshop, see: https://steamcommunity.com/workshop/browse/?appid=730&browsesort=accepted&section=mtxitems [last access: 20.05.2021].

25 It should be mentioned that modding can also be quite profitable outside of Valve's influence, for example, via payments through PayPal or Patreon. New models are also being developed in the community, such as the Mod Author Donation System by Nexus, which is intended to finance modders. See: https://www.nexusmods.com/news/13371 and https://www.nexusmods.com/modrewards#/store/all/1 [last access: 20.05.2021].

26 The total amount refers to all games that use Steam Workshop, see O'Connor 2015.

27 For example, the promotional video for the weapon "CSGO | Mac 10 | Neon Rider", see https://www.youtube.com/watch?v=7U_Bq36-Rc8 [last access: 20.05.2021].

First, finishes are valorized by users through commenting, criticizing and grading. If a finish has received enough approval and is integrated into the game by Valve, the skins can be earned or exchanged. Valve's guidelines state that virtual goods can only be traded on the Steam community market,[28] with Valve earning a 15% share for each transaction.[29] The focus on Steam gives Valve complete control over the trade of virtual goods and allows them to earn money. Second, published skins are evaluated by the community, with social interaction, e-sport and external platforms playing a decisive role. Self-expression is an important motivation for the purchase of virtual goods, as they are used to convey monetary, social and cultural capital, lifestyle and interests:

> "Within the immaterial space, people involved cannot represent themselves through their own physical-bodily appearance, but rather must use their avatar and other channels as intermediary."
>
> (Frieling 2017, 142-143; own translation)

The use of skins by professional e-sports athletes can give them additional prestige. For instance, at the beginning of the Arms Deal Update, the interface displaying tournament live streams was adjusted to display the name, model and rarity of the corresponding weapon used by the players.[30] Valorization also takes place in articles and videos discussing esthetic features of skins. For example, the opening of cases is celebrated on YouTube and Twitch,[31] and newly implemented skins are presented and compared in analyses. The various aspects of evaluation and display can be understood in terms of the concept of gaming capital as proposed by Consalvo (2007). Drawing on Bourdieu's conception of cultural and social capital, Consalvo uses gaming capital to describe the intertwining of gaming experience, positioning within the community and paratextual

28 The maximum balance of the wallet is limited to $2,000 and a single item may be offered for a maximum of $1,800.

29 The 15% consists of 5% as a basic flat fee and 10% specific to CS:GO, see https://support.steampowered.com/kb_article.php?ref=6088-UDXM-7214 [last access: 20.05.2021].

30 Later, the mention of the weapon was removed from the interface, presumably because weapon skins had become popular and well known by then.

31 In particular, video compilations of rare – and thus valuable – finds are published on various platforms such as YouTube, and then get millions of views.

gaming knowledge: "Players can accumulate various forms of gaming capital not only from playing games but also from the paratextual industries that support them" (ibid., 184). Skins can be described as a paratextual practice through which gaming capital can be acquired; for example, by demonstrating experience, affiliation, or wealth through access to rare skins (Paul 2018). This also effects external markets outside of Steam: there have been, and there still are, platforms that use weapon skin to transform this gaming capital directly into economic capital.

3.2 EXTERNAL MARKETS, GAMBLING AND BETTING

> "By one estimate, more than 3 million people wagered $2.3 billion worth of skins on the outcome of e-sports matches in 2015. This, too, has contributed to Valve's bottom line. The gambling sites run on software built by Valve, and whenever CS:GO skins are sold, the game maker collects 15 percent of the money."
>
> (Brustein/Novy-Williams 2016)

Gambling and betting using weapon skins are lucrative ventures. Starting in 2015 at the latest, third-party vendors have exploited Steam programming interfaces to circumvent Valve's rules. Those external markets made it possible to not only collect and trade virtual goods within the closed platform Steam, but also to pay out winnings directly via PayPal and Bitcoins (Martinelli 2017, 559). For example, the founders of OPSkins – a once popular external marketplace – stated in a 2015 Vice interview that they were taking in about 9,000 euros per day and had 370,000 users and 20 employees in their heyday (Coutu 2017). In addition, there were platforms such as CSGO Lotto and CSGO Wild that offered betting on professional CS:GO games[32] in addition to games of chance, such as coin tosses or roulette (Holden/Ehrlich 2017, 566). Instead of official currency, these games were played for weapon skins, which in some jurisdictions circumvented regulations and laws on illegal gambling. The popularity of

[32] According to estimates, skins worth an average of $134,000 were wagered per match during the period; the final game between Luminosity and Fnatic even recorded a total of $1.2 million in wagers, see Brustein/Novy-Williams 2016.

these practices caught the attention of the professional betting and gambling industry, which led them to also take an interest in the topic of e-sports and skins.[33]

This peak phase ended in mid-2016 with a series of scandals surrounding the professional CS:GO scene. Among other things, it became public that two popular YouTubers, Trevor *Tmartn* Martin and Tom *Syndicate* Cassel, owned a gambling website that they promoted in videos without disclosing their own involvement.[34] This led to the first lawsuits against Valve and various third-party providers (McWhertor 2016). In July 2016, Valve announced that it would block the use of the Steam application programing interface for such offers.[35] Twitch also followed suit and blocked users who streamed skin gambling. Although external marketplaces were repeatedly closed over the following years, they are still comparatively easy to find and continue to be advertised.

While gambling and betting are now prohibited, debate continues as to whether underlying random-based reward mechanisms such as loot boxes and skin cases themselves constitute a form of gambling. As early as 2015, Lehdonvirta described the visual and mechanical similarity between opening a case and the logic and design of slot machines (Richardson 2015; Hamari/Lehdonvirta 2010). Nielsen and Paweł (2018) analyze different forms of embedding the reward mechanic, differentiating whether the loot box and virtual goods can or cannot be bought or sold through the platform. With Steam allowing the exchange of both cases and skins, they describe games like CS:GO as "functionally similar to gambling" (ibid., 13). In addition, there are now several empirical studies that suggest a link between loot box mechanics and gambling. Zendle and Cairns' (2018) study demonstrated a correlation between the amount of

33 In 2016, two white papers were published by the company Narus, both of which are unfortunately no longer available online. Among other things, they described how e-sports, skin betting and gambling could be integrated into casinos.

34 With potentially far-reaching consequences: "The failure of the YouTubers to disclose their management stake in CSGO Lotto has raised many eyebrows in the industry and could potentially expose the two individuals to even greater liability." (Holden/Ehrlich 2017, 568).

35 See the related news story on Steam Blog https://store.steampowered.com/news/22883/ [last access: 20.05.2021].

money gamers spend on loot boxes and the incidence of pathological gambling.[36] Macey and Hamari's (2018) survey also indicated that individuals who follow e-sports competitions are more likely to engage in gambling.[37] It can be concluded that even though Valve is cracking down on external marketplaces, gambling still remains a problem because the core monetization of the virtual economy relies on potentially addictive mechanics, which in turn target minors. In addition, official licensed gambling companies are still sponsoring tournaments and teams.[38]

The analysis of the weapon skin economy in CS:GO exemplifies how the introduction of tradable virtual goods in CS:GO not only brought new incentives for players, but the skins also introduced complex economies for both the Steam platform and external providers. Taking the case study as a starting point, I will conclude by taking a look at platformization as a larger transformational process of computer game culture.

4. PLATFORMIZATION AND COMPUTER GAME CULTURE

Valve has managed to incorporate the practice of modding into their economy by establishing the Steam Workshop and paying individual modders, while valorization and other areas of community labor remain unpaid.[39] This official inclusion of modding can be read as part of a larger

36 Pathological gambling (or gambling addiction) is defined by Zendle and Cairn (2018) in this context as: "Problem gambling can be defined as a pattern of gambling activity which is so extreme that it causes an individual to have problems in their personal, family, and vocational life [...]. Problem gambling is typically described as being both excessive and involuntary" (ibid, p. 2). The Problem Gambling Severity Index (PGSI) was used for measurement.

37 "eSports, Skins and Loot Boxes: Participants, Practices and Problematic Behavior Associated with Emergent Forms of Gambling," (Macey/Hamari 2018, 20-41) – they define the loot box mechanics not as gambling, but as a "gambling-like experience."

38 For example, Betway sponsored the Intel Extreme Masters Season XIII - Katowice Major 2019, and gg.bet and cs.money were mentioned for the DreamHack Masters Dallas 2019.

39 See the discussion surrounding Paid Modding and Bethesda's The Elder Scrolls V: Skyrim (2011), where Valve backpedaled just a few days after introducing a similar model. This shows that it is not yet clear how this model can be adapted to other titles. See also the critical discourse analysis of the discussion in Joseph 2018.

narrative, which Knorr (2012a) refers to as "being a god full time". Referring to this quote, he describes the desire of modders to enter the professional field of game design. After all, weapon skin designers can also become well-known and successful, as in the case of Chris *Coridium* Brown, who created the ASIIMOV weapon skin series.[40] Despite careers such as Brown's, a crucial difference that Strube (2016, 59; own translation) describes as elemental to platforms remains: the "clear separation between those who [...] work for the platform owners and those who work on the platform [...] itself." In this sense, working on Steam can be understood as a virtual gig economy[41] in which a large amount of crowdworkers produce virtual goods (Waitz 2017). This gig economy is characterized by an informal conception of work and earnings, in which an anonymous group faces a centralized administration, and this relationship is characterized by asymmetric power. Profiles, assessments and lack of financial and social security are other elements of this conception of work.

At the same time, unpaid forms of participation and labor remain the norm in computer game communities (Zimmerman 2019). For one thing, players create content, such as tutorials or fanart, and help newcomers. In this context, Schäfer (2006, 303; own translation) speaks of players increasingly taking on "helpdesk and support tasks" when explaining gameplay mechanics to each other or pointing out bugs to companies. In addition, "through their intrinsically motivated work on consumer products, they simultaneously perform development and research for the companies." This development was already critically analyzed before the establishment of the Steam Workshop on the basis of concepts such as Invisible Labor, Playbour (Kücklich 2005), and Free Labor (Terranova 2000).

40 Chris Brown says he studied product design and works in the video game industry. He mainly created weapon skins to make money for his own passion projects. See the interview with him at: https://fragbite.se/cs/news/36127/asiimov-skaparen-steam-workshop-has-genuinely-changed-my-life#interview and his Steam Workshop site: https://steamcommunity.com/id/coridium/myworkshopfiles/ [last access: 20.05.2021].

41 The gig economy subsumes various short-term employment relationships, especially in the context of platforms that mediate between supply and demand. The platforms provide the infrastructure, but assume only limited responsibility for the workers.

Furthermore, it was set in relation to concepts beyond gaming culture, such as presumption, audience commodity or convergence culture (Postigo 2007). On the one hand, the discussion focuses on the exploitation of gamers and the siphoning off of various aspects of emotional, social and creative labor. On the other hand, it focuses on rules and guidelines under which this participation takes place. In turn, these policies are changing with the rise of centralized platforms. Historically, modding offered great freedom to players in terms of content selection, distribution and field of application. Even today, there are still many self-managed communities, especially for the modification of open-world role-playing games. However, the platformization of the Steam Workshop has narrowed the scope of CS:GO compared to older iterations. It is constitutive for the platformization of gaming culture that virtual goods and creative practices are externalized (gig economy), while at the same time centralized and controlled. Thus, production and evaluation are outsourced and designers are in direct competition with each other through the Steam Workshop. At the same time, critical or subversive appropriations, which were possible with traditional practices of modding,[42] are not impossible, but at least less likely because all information and decisions, as well as most of the profit, are directed at Valve. Valve doesn't have to exercise censorship for this, but the incentive system and the marketplace indirectly ensure that only popular weapon skins are included in the game. Skins that are not officially selected can be used on private servers, but they lose relevance in the competition-oriented multiplayer game.

The weapon skin economy exemplifies the process of platformization as described by Helmond (2015), Niebog and Poell (2018). Platforms provide infrastructure and externalize practices, but retain control over generated data, profiles and monetization. In the case of CS:GO, this can be

42 For the original Counter-Strike, the artistic intervention Velvet Strike (2002) by Anne-Marie Schleiner, Joan Leandre and Brody Condon can be seen as a striking example. On the associated site sprays and other things are downloadable so that they can be used as a critical intervention in the game, similar to a virtual protest. See http://www.opensorcery.net/velvet-strike/about.html [last access: 20.05.2021].

seen in how skin modding and community building have been commodified through centralization and incorporated into a marketplace.[43] As Galloway describes, this points to a more fundamental shift in the relationship between workers and players:

> "This will be the ultimate tragic denouement of the rise of gaming, of the democratization of play, of social media, of open-source software: it will result in the open-sourcing of all labor; the demand for "volunteer" workers will metastasize across all spheres of public life. Tasks will be crowd sourced more and more. Greater value will be extracted for fewer and fewer wages."
>
> (Galloway 2014)

Playing outside the logic of exploitation is disappearing - and this has an impact on the social conception of labor and leisure.[44] At the center of this transformation are large studios and platforms that focus on controlling access and the long-term involvement of players with their products. On the part of the game industry, this development is partly staged as a consequence of the "disruptive" forces of technical innovation. For example, Andrew Wilson, CEO of EA, explains the shift from ownership to access as follows: "The advent of cloud has pretty much been at the center of every disruption of every major industry on the planet over the last five years [...]. The disruption is typically driven across all industries toward access over ownership" (Futter 2019). Concepts such as games as a service, cloud gaming and the streaming of games show how closely the design of games is intertwined with business models.[45] Games as a service, for example, refers to various commercial models that aim to bind players to

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43 In addition to this example, there are other developments and mechanisms that can be understood as part of this transformation, be it the freemium model of titles like Fortnite, subscription systems like the Battle Pass, the focus on different virtual currency systems or the increase of gambling mechanics and microtransactions.

44 Joseph (2018) describes the future of gaming culture similarly when he concludes: "[...] the habits and spaces that once marked [Games] as distinct activities from our work lives will quickly disappear [...]. The 'discourse of digital dispossession' will be omnipresent as social life and hobbies are fully commodified." (ibid., 3). See also his presentation "Digital Games. A Canary in the Coal Mine of Capital," https://socialistproject.ca/leftstreamed-video/digital-games-canary-in-coalmine/ [last access: 20.05.2021].

45 Kim Soares, founder, CEO and lead designer of Kukouri Mobile Entertainment (Finland), for example, explains how the business model has become more important

virtual game worlds for the long term by providing additional game content that is then monetized. In cloud gaming, the game is run on external hardware and only certain data, such as an audiovisual stream and input, is transmitted to and from end devices.[46] In both cases, there is a transformation from ownership – of hardware and software – to a platform-based access economy (Rifkin 2000).

A contrasting perspective would be to take computer game companies seriously in their role as pioneers of platformization, especially when it comes to adapting, developing and discursively anchoring new technological and economic models. Among other things, this would include the control of production and distribution by individual platforms (such as Steam), on which virtual goods are in turn produced and traded. The use of behavioral profiles, the recording of decisions and the use of this data in the context of virtual worlds, and most recently the integration of (unpaid) labor, has also been (further) developed through games. The parallels between weapon skin economies, on the one hand, and platformization, access economies and gig economies, on the other, indicate that there is not a one-way, but rather a two-way influence between games and economies. Participation in virtual economies within games therefore does not take place in the wake of technical innovations, but the game worlds themselves are experimental fields in which new practices and forms of labor are tested and learned (Dyer-Witheford/de Peuter 2009). In this sense, the platformization of virtual goods, modding and the estab-

than the game design in mobile gaming: "In mobile games, the race to zero in pricing of products has given birth to free-to-play. Free-to-play is now the dominant business model, and there's no going back. This severely limits what kind of gameplay choices developers have. We've been trying to come up with a new game concept for our next big project for some time now. We had several concepts that were confident we could make into good games, but forcing them into free-to-play proved impossible, so we abandoned them. It's frustrating. Increasingly, it's not about making a good game but about making a good platform for microtransactions (i.e. in-app purchases.)" (Ruggill/McAllister/Nichols/Kaufman 2016, 340–341).

46 Most recently, cloud gaming services such as Microsoft xCloud and Google Stadia have been at the center of the discussion about streaming as the future of gaming.

lishment of the weapon skin economy in COUNTER-STRIKE: GLOBAL OFFENSIVE should be understood as indications of a larger transformation of cultural production within computer game cultures.

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GAMES

COUNTER-STRIKE (1999), Minh Gooseman Le, Jess Cliffe, et al.

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VIDEO GAME MODDING AND MONEY

From Precarious Playbor to Reimbursed Labor of Love?

Finja Walsdorff

ABSTRACT

As hobbyist game developers, 'modders' transform video games by altering and extending their content. Even though the labor they carry out often contributes to the success of games, they usually do not get a monetary share of the value they enhance. Building upon this, modding has been discussed as a form of 'precarious labor' in the past, with authors drawing attention to the power imbalance between modders and official developers. At the same time, most efforts of reimbursing modders and 'paid modding' have caused controversy within the modding community, and modding is still seen as a voluntary, free-of-charge 'labor of love' by many fans. Among modders, however, increasing professionalization tendencies and commercial endeavors can be observed as well. Taking into account past and current efforts to commodify modding and in-depth interviews with modders of *Bethesda Softworks* games, this article explores different perspectives on modding and money and examines the strategies modders use to commercialize their derivative works and their fannish labor in general.

Keywords: modding, playbour, commodification, crowdfunding, payment

1. INTRODUCTION

Whenever a new book becomes a hit with audiences, or a TV show gains its first followers, it usually doesn't take long for creative fans to take the source material into their own hands and transform it. In today's age of the internet, their productive practices have become a mass phenomenon and most 'fandoms' are easily accessible, allowing fans to interpret and discuss their favorite media together, as well as sharing their own works based on it. Video games, too, provide a point of departure for fan-works, and many commercial releases are accompanied by fan-created, non-official stories, artwork, or web videos. A fan practice unique to video games is 'modding': the act of altering and extending the content of existing video games with user-created, custom-produced content (Sihvonen 2011, 12). The resulting game modifications ('mods') come in all shapes and sizes, ranging from smaller, cosmetic alterations to fundamental overhauls of games. Modders design new outfits for in-game characters, tweak gameplay mechanics, fix bugs, and sometimes even convert the source material from scratch. As is the case with other fan practices, most modders share their creations online for free. It's not just other players who benefit from this, but also the video game industry itself: Mods can improve games (Behr 2010, 64), pro-long the time they are actively played and endorsed (Postigo 2007, 302), serve as free market investigation (Kücklich 2007), and reach previously neglected target groups without putting official publishers at risk. Because modders rarely get remunerated for their free, often value-enhancing la-bor, the suspicion that video game companies take advantage of their technologically skilled fans as unpaid 'hobbyist game developers' is not un-founded (Abend/Beil 2017, 307). Official publishers not only receive reve-nues generated through modding, but usually also possess all intellectual property rights of mods made with assets from their games, which means that they can modify, adapt, and even sell the user-created content (Postigo 2003, 600). In this context, the video game industry has been urged to recognize modding as a form of labor that produces capital for official publishers, grant modders more rights,

ownership of the content they create, and a monetary share of the value they enhance.[1]

Modding as a fan practice has been theorized as a voluntary "labor of love" (Kow/Nardi 2010), and it has been claimed that financial interests are hardly a motivation to create mods (Behr 2010, 67). Still, and perhaps surprisingly, commercialization efforts can be observed within modding communities, and modders have come up with innovative earning opportunities in relation to their practice. The following paper seeks to discuss the commodification of modding by extending the focus to monetization strategies modders themselves apply – often independent of official developers and right holders. After having taken into account different perspectives on the relationship between the video game industry and modders, such creator-initiated strategies and examples of 'paid modding' will be discussed based on selected examples and interviews with modders of the *Bethesda Softworks*' games THE ELDER SCROLLS V: SKYRIM (2011) and FALLOUT 4 (2015).

2. WHAT IS MODDING?

While most mods alter smaller, often cosmetic aspects of video games, experienced modders may also tinker with a game's code and its deeper structures. In some cases, modifying games even results in so-called 'total conversions': technically complex modifications that fundamentally change a game and have only little in common with the original product (Beil 2014, 213). One of the best-known total conversion mods is COUNTER-STRIKE, originally a modification of HALF-LIFE (1998). The mod, released by Minh Le and Jess Cliffe in 1999, added a complex, competitive multiplayer mode to HALF-LIFE, and drastically changed the game's scenario and gameplay mechanics. Because it was massively popular with the game's audience, developer *Valve* hired some of the creators in charge and released an official version of COUNTER-STRIKE for Windows in 2000.

[1] In 2005, Julian Kücklich coined the term "precarious playbour" to describe the hybrid form of play and work modders carry out in their free time. The video game industry often benefits from this free, value-enhancing labor, as will be discussed in detail later in this paper.

On a similar note, the currently very successful Battle Royale genre, as seen in games like FORTNITE (2017), was first developed and distributed through modding. Success stories like that of COUNTER-STRIKE show that mods can compete with, or even exceed, some of the official products the commercial game industry brings forth. However, taking a closer look at popular modding platforms and communities reveals that most mods are developed on a much smaller scale. More common are so-called 'core mods' or 'script mods.' Here, modders add their own lines of code to introduce game-changing features, to add depth to existing gameplay mechanics, or to remove them altogether to work in new, improved systems. Such mods that leave the character of the original program largely intact are summarized under the term 'partial conversions' (Beil 2014, 208). Smaller partial conversions change single aspects of a game by minimally editing existing lines of code. Mods are also developed to wipe out in-game bugs (software errors) that have not (yet) been fixed by the official game developers (Poor 2014, 1262). Finally, the vast majority of mods are cosmetic in nature – so-called 'skins' or 'overhauls' that contain new textures for the 3D objects of a game. These cosmetic mods are realized through image editing software and change the appearances and clothes of game characters or the virtual surroundings, among other things. Some game developers provide editors or software development kits to support and simplify the development of mods. *Bethesda*, for instance, provides the free editing tool *Creation Kit* that supports the creation of new worlds, game characters and weapons, and helps change in-game textures. Mods are usually available for free and shared through online modding communities where users can download them and engage with modders by commenting, requesting new content, or giving suggestions on already existing mods. Modders can utilize these platforms to receive recognition and feedback, and may also meet others with whom they can create new content (Abend/Beil 2017, 310). In addition to large, general distribution platforms like *NexusMods* or the *Steam Workshop*, mods are also shared on fan-websites that focus on particular games. Because consoles are equipped with strict security measurements and a closed infrastructure that prohibits third-party content, mods are usually solely developed for

PC games (Behr 2010, 6). On rare occasions, however, the console versions of games, such as SKYRIM and FALLOUT 4, permit a slimmed-down, 'subject to approval' form of modding. While PC mods can be found on external, non-official websites, such authorized console mods have to be downloaded through the in-game menu and are thus subject to a much stricter examination than PC mods. Beyond that, they are simpler in nature, often come with size limitations, and prohibit the use of external assets. With the modding scene being spread across numerous platforms and forums, the phenomenon of modding can hardly be quantified. However, taking a closer look at platforms like *NexusMods* makes it evident just how popular video game modding is among players: In February 2022, *NexusMods* hosts 358,574 files for 1,606 games, has 31,536,657 registered members and 5,545,042,547 mod downloads.

3. PERSPECTIVES ON MODDING AND MONEY

Modding is usually considered a leisure activity practiced by hobbyists – and modders are not necessarily seen as professional game designers, but rather as "players and fans of the game" (Poor 2014, 1250). Since most modders have a strong connection and fannish relationship to the games they work with, their practices have often been analyzed through the theoretical lens of media fan studies. On the Internet, large distribution platforms like the aforementioned *NexusMods* or *Steam Workshop* as well as self-organized online communities allow video game fans to come together and participate in the "collective production, debate, and circulation of meanings, interpretations, and fantasies in response to various artifacts of contemporary popular culture" (Jenkins 2006a, 137). Similar to fans that creatively engage with media products such as books, films, or television series, video game modders can be described as "textual poachers": fans that create their own meanings and fill in the gaps with individual, perhaps even oppositional interpretations when going through media texts (Jenkins 1992). As textual poachers, modders elaborate on select elements of video games – whether it is the gameplay, the story, or cosmetic aspects – and make these games 'their own' by changing and

expanding them. In this context, modding can be compared to other fan practices, like fanfiction or fanart, with the particularity that certain technical knowledge and software is needed for the creation of most mods, and that mods don't exist separately from the official source material they are based on, but have to be installed *into* a commercial game to work.

In recent decades, the research interest of media fan studies has increasingly shifted to digital spaces. Because of their long-established practices of creating, sharing, and discussing their works digitally, fans are often considered early adopters of digital technologies (Jenkins 2006a, 138). Henry Jenkins discusses the shift in media culture towards digital spheres and the rise of active and productive forms of media consumption under the term "participatory culture" (ibid.) Another term that illustrates the blurring lines between media production and media usage is provided by Axel Bruns (2010, 195): "Produsage" comprises the creation of shared content in a participatory environment, collaborative processes, and new forms of distribution. As a participatory practice, it allows users to become "produsers" that engage with media productively and join forces online to continuously create new content. Interestingly, both produsage and participatory culture don't seem to be built upon monetary incentives. Instead, communal recognition and the ideal of a non-commercial culture of creation appear to be their driving factors (Reißmann et al. 2017, 161). In fan studies, too, it has been found that fan labor most often is not associated with profit because fan work is usually made available free of charge on the Internet. Fan communities are thus described as gift economies based on sharing and bartering (Postigo 2003; Jenkins 2006b; Hellekson 2009). While these communities are not based on money, their foundation is not necessarily generosity, however. Instead of monetary rewards, immaterial reciprocations (e.g., attention, recognition) are often expected and exchanged here (Anderson 2010, 152). The status that hobbyist fan laborers gain within their communities can be one of the motivations to create and share mods – and for many, recognition and appreciation are enough (Behr 2010, 63). It would therefore be presumptuous to assume that money is the only form of compensation productive fans receive and care about (Postigo 2003, 604). Nevertheless, it is worth noting that the

'free of charge mentality' associated with fan culture does not necessarily apply to all productive fans, and that monetary interests *can* be an incentive to contribute – or at least a welcome opportunity. As John A. L. Banks (2003, 10) already pointed out in the early 2000s, this is not a new development, either: "The fans are fraternising with the enemy or even going commercial themselves, what is to be done!"

Interestingly, this idea of 'fraternizing with the enemy' – in other words, productive fans cooperating with official media producers – is often highlighted when discussing modding practices. Take, for instance, THE SIMS: Shortly after its release in 2000, the game had not only attracted a large online fan community, but also a considerable number of content creators who eagerly transformed the life simulation by introducing new styles of furniture to the virtual living room, developing celebrity look-alike skins, or coming up with innovative gameplay mechanics. Developer *Maxis* not only tolerated the modded game content, but in fact entered into dialog with the productive SIMS fans and recognized mods as an important contribution to their own product (Jenkins 2006b, 162-167). The creators of THE SIMS had developed an early awareness of the fact that modders' innovative ideas can contribute to the success of a game. As a result, the company's terms and conditions were adjusted and subsequently permitted prolific SIMS fans to earn minor revenue to cover costs associated with distributing their fannish activities and products, e.g., web hosting (ibid., 167). Soon, the first 'mod subscriptions' emerged. Here, users do not buy individual modifications, but pay for monthly or unlimited access to the restricted download area of a website. Part of the reason for this 'pay-to-use' approach was the traffic that popular SIMS modding websites were overcome with. Modding websites on free servers were often down because of high traffic volume, and webmasters had no choice but to pay for more bandwidth if they wanted their content to be seen. So-called SIMS 'paysites' still exist to this day, with *Newsea Sims* offering monthly memberships (and with it access to all of their SIMS mods) for $9,50, and a 12-month subscription for $70, for example. Other paid modding sites have switched strategies over the years. *The Sims Resource*, launched as the first SIMS fansite in 1999 and once the biggest paysite in

the SIMS universe, now states on its website: "We offer more custom content than any other site and it's all for free!" (The Sims Resource 2022). However, users may subscribe to an optional VIP membership and pay between $3 and $12 per month, depending on the total length of the subscription and its auto-renewal (a 12-month subscription will cost $3 per month, a 6-month subscription $3,67 per month, a one-time payment for 4 weeks $12, etc.). VIP users get exclusive perks, such as no advertisements on the website, early access to custom content two weeks before it is available to free users, and several features that make browsing, downloading and installing mods more pleasant. Besides optional VIP memberships, some SIMS websites also accept voluntary donations to cover their costs and sell advertising space on their websites. While any commercial use of the SIMS software technically violates developer *Maxis*' and publisher *Electronic Arts*' end-user license agreements (EULA), both rarely take action against it. In fact, in 2009, a *Maxis* spokesperson defended the practice:

> "We are proud that so many of THE SIMS and THE SIMS 2 players create their own art for the games and share it with others. Sharing art online is a hobby that involves an investment of time, energy and money. Whether players choose to share their original artistic creations with the community is up to them: some custom content creators design work for a fee; some host their works on sites that organize, store and serve an enormous amount of content for subscribers; some artists request donations; and some artists allow all players to download their creations for free. These artists set their own terms for how they want to share their talents with the community at large. Those terms should be respected by other players."
>
> (MaxoidDrea, BeyondSims 2009)

In 2017, this laissez-faire policy was officially rebutted when *EA* employee SimGuruDrake explained: "Creators cannot lock content they make using our game behind a paywall. While we do not police this content (there is no way we would create a team simply to monitor this) we do take reports sent to us seriously and [act] accordingly" (SimsVIP 2018). Interestingly, the same statement made clear that paid content as an incentive is permitted. This means that modders can offer such content as long as it is made available for free after three weeks. While workarounds like VIP

memberships and voluntary donations for modding websites do not necessarily interfere with *Electronic Arts*' EULA, even paysites that constantly lock content behind paywalls are not being prosecuted and there have been no legal cases as of yet. Players are encouraged to report policy infringements, but the online form they are referred to does not cover paid mods, which suggests that while *Electronic Arts* does not support such paid content, perhaps it is not a top priority when it comes to enforcing the company's terms of service. Lastly, it is also worth considering that not all modding content for THE SIMS necessarily is an intellectual property rights violation because certain cosmetic game assets, like original meshes (and not, e.g., recolors of the official in-game items) can be created *for* the game without using actual content *from* the game.

More so than in other gaming communities, paid modding has always been a topic of interest within the SIMS community and has been utilized both by content creators who sell and players who buy mods. At the same time, paysites and all means to generate income through mods have been critically discussed and often rejected by SIMS fans in the past. As John Fiske notes, commercial interest can actually appear as an affront within fan communities: "[T]here is a strong distrust of making a profit in fandom, and those who attempt to do so are typically classed as hucksters rather than fans" (Fiske 1992, 40). Up to this day, *Electronic Arts* is often prompted by players themselves to take action against mod sellers, and websites with paid content are repeatedly reported in the official forums. Taking up this debate, modder J. M. Pescado founded paysites.mustbedestroyed.org in 2006, a website that hosts 'pirated' content from several paysites, making it available for free. Pescado's project is still active and also covers the most recent installment of the series, THE SIMS 4. In February 2022, paid content from over 200 *Sims 4* creators is offered here free of charge, with the front page prominently citing *Electronic Arts*' EULA.

THE SIMS and the way modding is responded to by its official producers – from clear endorsement and appreciation in the early 2000s to a laissez-faire approach in the late 2010s – sheds light on the volatile relationship of modders and official publishers. American developer, pub-

lisher, and digital distribution company *Valve Corporation* supports modding through the distribution platform *Steam Workshop* that allows users to share their custom content with others. Successful mods have the chance of being bought by *Valve* – and particularly competent modders may get the opportunity to join the games industry, as the case of COUNTER-STRIKE's developers being hired by *Valve* illustrates. In 2021, Polish developer and publisher *CD Projekt Red* hired the creators of fan favorite mod "WolvenKit," with the modders' own studio Yigsoft becoming part of the company while staying operationally separate. In an interview with *Kotaku*, a *CD Projekt Red* representative explains: "The modding community has always been very important to us and we are happy to be working with them side by side on further expanding the tools which are available to modders" (Notis 2021). That same year, *Bethesda* hired Stephanie Zachariadis, head writer of the DLC-sized "Fallout: London" mod, as an associate quest designer (Bevan 2021). Video game companies have come up with various approaches to support modding in the past. A notable example is *Epic Games'* and *Nvidia*'s "$1,000,000 Nvidia Make Something Unreal Contest" in 2004 that comprised high cash prizes and an Unreal Engine 3 license (Sotamaa 2005, 6). In 2016, *Nvidia* and *Bethesda* launched the "FALLOUT 4 Mod Contest" that honored exceptionally talented modders. The winner received $10,000, a unique, FALLOUT-themed PC, and engineering support from *Nvidia* (Bethesda 2016). In fan studies, this endorsement of the modding scene has been discussed by Henry Jenkins, who brings up COUNTER-STRIKE's acquisition by *Valve* and developer *BioWare* including fan-made mods in the official expansion packs of NEVERWINTER NIGHTS (2002) as unique examples of official media producers cooperating with productive fans (and vice versa). Jenkins (2006b, 164) points out that compared to other fan cultures, "the modding community may be unique in having amateur-produced works taken up directly by commercial companies for distribution." However, such instances of paid cooperation are rare, and modders usually don't get a share of the financial success of games despite contributing to their value (Postigo 2003, 597; Abend/Beil 2017, 307). The phenomenon of modding being utilized as value-enhancing, free labor by the industry has been

critically discussed as "precarious playbour," a term coined by Julian Kücklich (2005), who notes that "modders' leisure is being commodified by the games industry." As mods can only be used *with* and *in* the games they are based on, they don't transform the original products figuratively, but actively, by adding new content, tinkering with gameplay mechanics, and eliminating bugs. Again, official developers and publishers can profit from this type of free, skilled labor their userbase carries out, despite usually not directly generating revenue through mods (Postigo 2003, 596). Modding calls attention to current trends and players' preferences – and themes, genres, and gameplay mechanics first tried out through mods have been adapted by official publishers in the past. In that way, as Kücklich (2005) puts it, modding can "inject a shot of much-needed innovation into an industry seemingly unable to afford taking commercial risks." By constantly adding new dimensions to games, modders contribute to keeping them interesting and up-to-date (Postigo 2003, 596). Modding can even extend a game's shelf-life, as games like THE ELDER SCROLLS V: SKYRIM demonstrate: First released in 2011, SKYRIM still has an active playerbase in 2022 – largely thanks to modders that have modernized the game by enhancing its gameplay and its textures, giving players a reason to still play SKYRIM or pick it up for the first time over a decade after its release. Against this background, it is not surprising that modding is not only tolerated, but actively supported by some game companies. Most player communities are well aware of the industry's seeming reliance on modders as non-official (but much needed), unwaged hobbyist game developers, and the video game industry is in turn often accused of having a 'mods will fix it' mentality. "Yet for some stupid reason we all accept this," a user on *Reddit* writes when discussing 'broken games' (games with numerous bugs or serious gameplay flaws), "because [there is a] legion of hardworking, unpaid modders to clean up the mess."[2] Such observations have also been picked up by the media, with two rather bumpy game re-

2 https://www.reddit.com/r/fo4/comments/3z3eye/im_getting_sick_of_mods_will_fix_it_because/ [Accessed May 21, 2022].

leases in 2020 and 2021 being accompanied by headlines like "Cyberpunk 2077: Modders Fix The Entire Game" (Singh 2021), and "GTA Trilogy Modders Are Already Working to Fix the Game" (Coulson 2021).

Even in the rare cases that companies directly pay modders for their work or pay them shares when mods are getting monetized, the suspicion of precarious labor is perhaps not unfounded, and publishers have been called out for this in the past. In 2015, *Valve* and *Bethesda* introduced their concept of 'paid mods' to the *Steam Workshop*. The short-lived, optional feature allowed users to offer their mods for sale at a fixed rate or as a 'pay-what-you-want' proposal. The earnings were then split amongst *Valve*, *Bethesda*, and the respective creator, with the latter earning 25% of the revenue. This introduction of paid mods caused great backlash among both modders and players, and resulted in an influx of complaints, petitions and protest, some of it actually through modding: After user amusquiz had uploaded a digital protest sign with slogans like "Free the Mods" and "No Paid Mods" for the characters of SKYRIM to hold up (see Fig. 1), it briefly became the most popular mod on *Steam Workshop*.

Fig. 1: SKYRIM mod "Protest sign: No paying for mods".
(Source: https://steamcommunity.com/sharedfiles/filedetails/?id=431467621, Accessed May 21, 2022)

While most mod-users and modders agreed that *Valve*'s and *Bethesda*'s perspectives on paid modding were flawed, their arguments were diverse. Some users denounced paid modding in general, referring to the idea of modding as a voluntary, unconditional labor of love, and accusing supporters of paid modding of being "sellouts" (Gain 2015). Others criticized the small revenue of only 25% that modders were supposed to receive despite 'doing all the work.' However, it was not just the companies' payout policy that faced criticism: Modders, too, were accused of shady business practices in light of offering minor cosmetic changes with a price tag of up to $5. Plagiarism turned out to be an issue as well as, here and there, users took external content from free distribution platforms like *NexusMods* and re-uploaded it to the *Steam Workshop* as paid content without the actual creators' consent. Beyond that, it was pointed out that many mods on *Steam Workshop* draw on third-party content that neither *Valve* nor *Bethesda* own the rights for – and that selling such content could fall under copyright infringement. Lastly, users were apprehensive of a growing centralization and surveillance of modding, as all paid content was supposed to be approved by *Steam*. Less than a week after the launch of the paid mods functionality on *Steam Workshop*, the feature was removed and buyers were refunded, with a *Valve* representative explaining:

> "[W]e underestimated the differences between our previously successful revenue sharing models, and the addition of paid mods to SKYRIM's workshop. We understand our own game's communities pretty well, but stepping into an established, years old modding community in SKYRIM was probably not the right place to start iterating. We think this made us miss the mark pretty badly, even though we believe there's a useful feature somewhere here."
>
> (Johnson 2015)

Two years after the paid mods controversy, *Bethesda* launched its *Creation Club* in 2017. The *Creation Club* contains a curated collection of new in-game content (weapons, apparel, decorations, characters, gameplay, etc.) made by fans. Different from paid mods on *Steam Workshop*, this content exists separately from other mods and is not part of an otherwise free platform, but is exclusively distributed through FALLOUT 4 and SKYRIM

where it is published as official content and can be bought on digital marketplaces. Modders interested in the *Creation Club* cannot simply upload their content for sale, but have to apply and pitch their ideas to become part of the project. While applications are open to everyone, it can be assumed that experienced, skilled modders are preferred as the *Creation Club* aims to publish premium content. If selected as official creators, participants will be paid throughout development of their commissioned work, although the amount of payment is not publicly known. The selected mods run through a development pipeline and are fully localized so that compatibility with the original games can be ensured (Bethesda 2017). Once released, modders do not get a revenue share of their published content. In that sense, the *Creation Club* may be compared to outsourcing the creation of smaller downloadable content (DLC) to third party contractors. Perhaps addressing the 2015 controversy, *Bethesda* makes it very clear on their website that working with the *Creation Club* is not the same as paid mods, that all content promoted through the club is original, and that mods in general will remain a free system:

> "We've looked at many ways to do 'paid mods', and the problems outweigh the benefits. [...] But, there's a constant demand from our fans to add more official high-quality content to our games, and [...] we think many in our community have the talent to work directly with us and create some amazing new things."
>
> (ibid.)

Just like paid mods on the *Steam Workshop, Bethesda*'s *Creation Club* has caused some controversy since its launch due to being a microtransaction marketplace, its pricing policy, and the (so far unfounded) fear that free distribution platforms could be affected. At the same time, it has been praised as being a mutually beneficial project that allows modders to work with and learn from professional game developers and have their work promoted in the official games.

4. FROM PRECARIOUS PLAYBOR TO REIMBURSED LABOR OF LOVE: MONETIZING FANNISH LABOR IN THE *BETHESDA* MODDING COMMUNITY

How do modders feel about 'paid modding'? Can they imagine selling their content, and if so, under which circumstances? What do they think of companies that try to commodify modding? And beyond directly selling mods, which strategies are used to reward modders financially? These and other questions were discussed during 12 in-depth interviews with female modders in 2019 and 2021.[3] The interviews, in which the participating modders discussed their practices, motivations and ambitions in relation to modding, were part of a larger netnographic examination of the *Bethesda Softworks* online modding scene with a focus on the action role-playing games THE ELDER SCROLLS V: SKYRIM and FALLOUT 4. The interviewed modders are between 20 and 55 years old, live in Europe and the US, and have different levels of experience; one interviewee was new to modding, while another participant had already started creating mods in the 1980s.

As discussed above, *Bethesda* has come up with different ways of endorsing, supporting and monetizing modding in the past. Some of them caused backlash, as the 'paid mods controversy' on *Steam Workshop* in 2015 illustrates. At the same time, *Bethesda*'s benevolent stance on modding and their support of it through free tools and promotion is often positively highlighted. One modder notes: "*Bethesda* so far has been in a league of their own in terms of modding support." Another modder adds: "I guess *Bethesda* is happy that we're keeping their game alive and thus increase their bottom line, and we are happy to get official tools when most publishers would never even think of releasing them to the public." There is a general openness among modders to cooperate with official developers. Modders with ambitions to join the games industry are particularly interested in this kind of collaboration and describe their relation-

3 Below, selected quotes from the interviews will be shared. All participants have been fully anonymized.

ship to *Bethesda* as mutually beneficial: "Some people paint it as something parasitic, that Bethesda feeds off the modding community, but for myself I see it as mutualism. We all benefit from the relationship – modders, *Bethesda*, and mod users."

For most interviewees, immaterial rewards like recognition and appreciation are more important than financial benefits. In order to obtain this, various strategies of self-marketing are deployed. This includes advertising on social media, video trailers for upcoming mod projects, and elaborately designed websites in addition to profiles on modding platforms. While this desire to 'be seen' and recognition as an immaterial currency within the modding gift culture are widely accepted, the introduction of actual money and monetization strategies to modding communities seems to be controversial. Some interviewed modders argue that the practice should be a free-of-charge endeavor and a labor of love – and that the introduction of paid models can actually harm the modding community and threaten modders' independence. In the interviews, it is often noted that players have high expectations of modders already, and that this could become worse if they were to be paid:

> "I hate it when people comment in a fashion that gives me the feeling that they think I work for them and that I *have* to implement their requests/suggestions, etc. I consider suggestions when presented politely, but I am not sure why some users think they can tell me how to code my mod. Last time I checked they were not paying me a salary!"

It is also assumed by some that user-created content becomes worse in quality as soon as money is involved, as earnings then seem to become more important to creators than passion and creativity. A critical modder explains: "Mods were made with love and care. Mods made for money are just to make a fast buck. Money corrupts and destroys modding. It should remain free, a labor of love and pride in a job well done." One participant points out that corporate interference can drive apart the community, and that projects like the *Creation Club*, where selected modders are hired by *Bethesda* to create content for sale in a professional, secluded environment, take away modders from an otherwise non-commercial gift culture:

> "I feel it has divided the modding community and caused a lot of great modders to [...] go to *Bethesda* in hopes of earning more money. I really hate what *Bethesda* has done with their *Creation Club*, which has taken wonderful free (or donation only) modders out of the free modding community and instead they are now just making paid mods."

While all interviewed modders are aware of the controversy surrounding paid mods and some of them are highly critical of the topic themselves, there are also some advocates among the participants ("Wouldn't it be nice if I could just keep doing what I love (making mods/games) and get paid for it? Yeah. Yeah, it would"). It is often mentioned that content creators deserve compensation for their work. "I think that it should be done in a way that respects the users, the modders and the game company," one modder explains, "However, far too often, each of the three groups only cares about their own profits." Another modder claims that players often solely protest against paid modding for their own advantage:

> "People burned *Bethesda* to the ground paying the authors by purchasing the rights to what they created. Then selling those mods as DLC. '*Bethesda* is making money from the authors! They're being used!' The truth is, the end users didn't want to reach in their pockets for the mods people work on."

Most interview participants have paid for mods before or can imagine paying for particularly elaborate mods that require a lot of work ("I would gladly spend money on mods that expand games or add new maps"). The direct sale of their own work does not seem to be an option for most interviewees, however. Interestingly, this seems to be less of an expression of modesty, but is often connected to a perceived lack of skill: "I mostly create smaller, cosmetic mods. I don't think that anyone would pay for that." The answers are quite different when experienced, so-called 'veteran modders' are asked about financial rewards. Particularly adept modders are more in favor of paid services and financial remunerations. They do not necessarily see their practice as a mere hobby, but as "serious leisure" (Stebbins 1992, 2) that deserves to be rewarded. When discussing this, an expert modder who has written and coded several DLC-sized mods compares modding to a job that requires professional skills and is quite time-consuming. Besides creating and maintaining the actual mod,

her free labor also includes providing modding tutorials and commented source code for other modders to study and learn from. She says:

> "I think that modders have every right to expect some compensation for their work. There are those saying 'modding is meant to be free!' and mean 'I want you to give me free stuff!' Modding is software development, and at the level some of us are doing it, it requires both professional skills and serious time commitment. In other words, it's a job. I do believe that users financially supporting modders will result in more and better-quality mods. Which is a win/win situation for everyone."

Selling mods that use copyrighted assets from commercial games interferes with most publishers' end-user license agreements. *Bethesda*, too, prohibits the direct sale of mods based on their commercial assets. Because of this, legal workarounds to generate revenue enjoy great popularity among modders. Through 'donations,' users can financially support content creators for their labor in general and express their gratitude without buying individual items. Modders that accept donation often claim that even small contributions help them to remain motivated. Because modding is usually carried out during the creators' free time, donations can result in a gain in time to spend with the hobby. In this context, one modder explains that she does not have to take another part-time job thanks to her donors – and that she can use the saved time for modding. Most modders interested in donations have their own profiles on crowdfunding platform *Patreon*. *Patreon* can not only be used as a digital tip jar for content creators, but also has a subscription system that lets 'Patrons' pay a monthly amount to the owner of a *Patreon* profile. Subscriptions can be cancelled each month and usually come in various 'tiers' with different rewards. While the $1 tier is often used as a non-committal tip, one interviewed modder for instance offers rewards for monthly donations of $5, granting subscribers access to additional content for her most popular mod, twenty-four-seven technical support, and an invite to her community server on *Discord*. In addition to these perks, users that pay $30 per month can request merchandise and exclusive commissioned work. Such commissions for individual users are slowly becoming more popular within the modding scene and offer yet another way of generating income

through the hobbyist practice. Another modder provides personalized shout-outs in her mods to everyone who buys the $25 tier. The interviewed modders that use *Patreon* make between $200 and $550 per month on the platform. One modder has stated on her *Patreon* profile that her goal is to earn $1500 per month, and she explains that this could eventually work out as other, particularly prolific modders generate even higher amounts. To give an example: "Basemental" modder Filip created a series of adult mods for THE SIMS 4. In February 2022, his *Patreon* profile has over 6,600 members, with the lowest monthly membership costing $4,75 (Basemental 2022). Although such cases are rare, it is worth noting that even smaller modders can earn a little extra money through platforms like *Patreon* if they have devoted followers. It is important to the respondents that donations are voluntary and that mods are not (permanently) hidden behind a paywall. When browsing *Patreon*, the picture is mixed: While some modders create exclusive content that only donators receive, others make such content available for everyone after a few weeks. Many modders also keep their mods free, and use *Patreon* to receive tips without offering any rewards or paid mods.

All interviewed modders share their content on the distribution platform *NexusMods*. In 2018, *NexusMods* introduced the reward system 'Donation Points' which works as follows: Parts of the revenue from advertisements and premium memberships on *Nexus Mods* flow into a donation pool every month. In addition, *Nexus Mods* has its own *Patreon* profile ("Mod Author Donation Fund"), where users can donate $1 once-only or monthly. Modders may register their content for the Donation Points program to receive points for each unique download of their content, with 1000 Donation Points equaling $1. Received points can also be split among up to 24 users who worked on the same mod. At the end of every month, Donation Points are proportionately disbursed to the participating modders, depending on the amount of money in the pool and the total number of participating modders, unique downloads, and total downloads. Earned Donation points can be redeemed for cash, used in the *NexusMods* store to buy a premium membership or selected games, or be donated to charity. In May 2022, a total of $2,048,764.50 has been paid out

through Donation Points since the program's launch in May 2018 (NexusMods 2022). Over 50% of the Donation Points on *NexusMods* are generated through mods created for SKYRIM and its Special Edition (see Fig. 2).

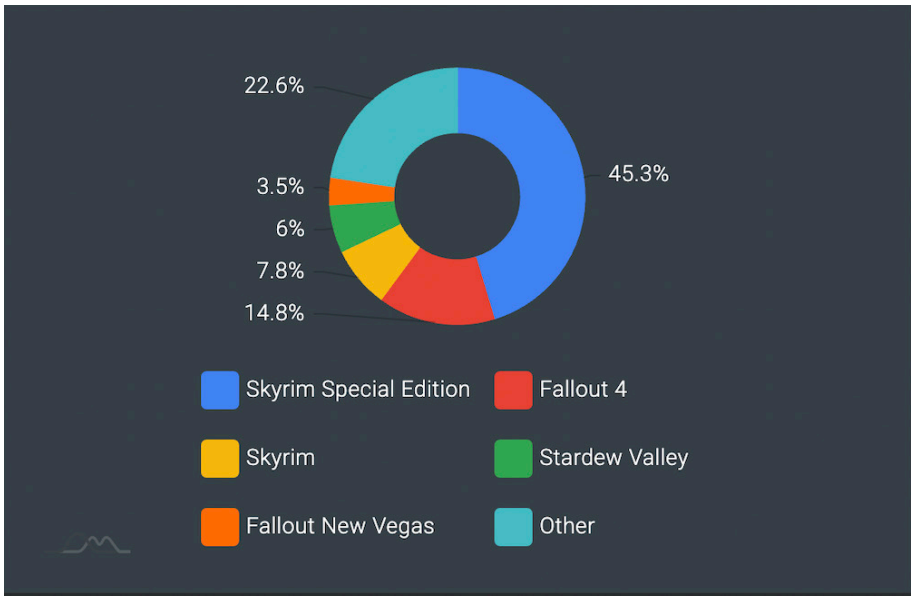

Fig. 2: All time Donation Points distribution on *NexusMods*, sorted by game. (Source: https://www.nexusmods.com/about/donation-points/, Accessed May 21, 2022)

While the Donation Points system is generally approved by modders, it is also critically pointed out in the interviews that *NexusMods*, despite not being a video game publisher, is a commercial player and more a part of the video game industry than of fan culture:

> "These websites have always been for profit [...] and generated massive incomes for their private owners. We are making money for other people. We're 'provided' hosting, and forums to address user comments, but for what reason – was my thought. Why do we launch or host our work for other people to be paid huge sums for the Internet traffic? It doesn't help me with my hobby. It doesn't provide me any tools at all to ease the 1000s of hours I pour into my developments."

While the direct sale of mods seems to be a taboo within the *Bethesda* community (as one modder puts it: "Paysites is a dirty word!"), workarounds like *Patreon* or *NexusMods*' Donation Points are supported by most

modders. Interestingly enough, one modder explains that "money just corrupts everything it touches, and the mod scene was so pure before paid modding became popular," but, at the same time, uses the *NexusMods* program as a perceived morally acceptable alternative. Like others, she argues that these solutions are based on voluntariness, with the uploaded modding content still being available free-of-charge for users.

5. CONCLUSION

This paper has presented several instances of paid modding and donation systems in relation to the practice, initiated by both the video game industry and non-official creators from the modding scene. Beyond that, *Bethesda* modders' perspectives on paid modding and payment workarounds were discussed. Proceeding from this, it can be noted that under certain circumstances, financial interests can be a motivation for modders to contribute. For most modders in this context it is important that financial compensation is voluntarily and that content is not permanently hidden behind paywalls, so that non-paying users have no disadvantage. Similar to other fan communities, the direct selling of otherwise free fanworks is mostly seen critically, with one exception: Experienced modders that spend a lot of their free time on large projects, performing unpaid labor, can imagine being paid by users – and in some cases, this is already happening, with users agreeing that such profound work should be financially rewarded. There have also been cases where the games industry itself tried to monetize modding, some of them controversial, and others more accepted. In the discussed instances of official cooperation, all intellectual property rights of modded content remain with the official companies. Modders are either paid a small share of the revenue or are paid one-time only to do commissioned work for official publishers, thus not benefiting from potential revenue at all. Because of this, it could be argued that most official monetization strategies, despite being seemingly supportive of modding, are merely another form of precarious labor, perhaps in a somewhat more appealing design. Paid modding has always been a

very controversial topic within the modding community – and when facing such strong opposition and perspectives that legitimately theorize modding as precarious labor, it is easy to overlook that financial incentives can play a role in modding, and that modders have found innovative ways to bypass these precarious conditions by coming up with monetization strategies independent of the games industry. This form of emancipation from official producers and modders taking matters into their own hands should not be disregarded when discussing modding both as precarious labor and a labor of love – and perhaps it can serve as a reference point when examining other fan practices in the context of paid services.

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THE SIMS 4 (2014), Electronic Arts.

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PAPERCRAFTING UTOPIA

Gaming Literacies from Bauhaus to Nintendo Labo

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ABSTRACT

What does the Bauhaus have to do with Nintendo Labo and the Maker Movement? The text represents a media-pedagogical investigation. It explores the question of the extent to which material studies at the Bauhaus - especially in the preliminary course, the "Vorkurs" - were understood as a field of experimentation in order to test and further develop reform pedagogical approaches. Certain ideals and values are inscribed in this process, which we can still identify today not only in so-called pioneering communities such as the Maker Movement, but which are also a central component of an educational game such as Nintendo Labo in which we are supposed to use cardboard kits to assemble the components of the Nintendo game console in a new way. These considerations are followed by ideas about play and game literacy, which is outlined here in general terms. Three aspects come to the foreground: (1) a rejection of traditional pedagogical approaches; (2) a fundamental re-evaluation of the possibilities and a radical simplification of the artistic material; and (3) an experimental, playful approach that has an explicitly constructive character.

Keywords: Nintendo Labo, media education, maker movement, Bauhaus

1. INTRODUCTION

> "I want you to pick up the newspapers now and make more of them than they are at the moment. I also want you to respect the material, to make sense of it. If you can do that without tools like scissors or glue, even better." (Albers, cited in Neumann 1996)

Josef Albers was no friend of paper collages. According to an anecdote attested by the Bauhaus Archive, Albers is said to have turned up at the legendary Bauhaus "preliminary course" with a pile of newspapers in his hand, laid it on the table and asked his students to redesign it. If one believes this story, then Albers reacted downright rejectively to all the pictorial works that were created in the process. Things only became interesting for him when the newspapers developed into expansive sculptures made of paper through elaborate folding techniques. In this way, the material, which at first glance seemed simple, was not only respected, but virtually transported into new spatial spheres by embracing its full potential.

The material on which Nintendo LABO is based also demands a certain amount of respect from the person playing. In addition to the software module for the Switch console, which is about the size of a postage stamp, we have to deal with a collection of several oversized construction sheets that need to be punched out, folded and inserted into each other (see Figure 1).

Fig. 1: Assembling the Nintendo LABO kit. (Used under CC0 license, Tinh tếPhoto)

The so-called Multipack, with which Nintendo LABO was launched in April 2018, contains five such kits: a house, a fishing rod, a piano and a remote-controlled car (which is more reminiscent of a robot beetle or a Bristle Bot). After each building process, the Nintendo Switch and its peripherals are inserted into the cardboard construction to bring the models to life, meaning connecting a nearly endless number of little folded boxes and plugs that not only become a physically tangible and playable object, but that also create a transition from a material game to a digital game. But this transition is by no means seamless: The physically existing seam that holds together the analog materiality and the digital immateriality is an essential element that is fundamental to the experience of play. An example of such a seam is the physical nylon thread that leads out of the fishing rod we have constructed (see Figure 2): It slides into the cardboard casing that encloses the screen of the Switch tablet and continues on the screen by a virtual counterpart that reacts to the movements of the actual fishing line with surprising precision. Manifesting before our eyes (and in our hands) is a fairly simple fishing game that invites us to explore and catch digital fish.

Fig. 2: Using the Nintendo LABO fishing rod. (Used under CC0 license, Tinh tế Photo)

Using the Nintendo LABO playing material as a case study, this essay attempts to trace an esthetic idea through cultural history that was formulated by the legendary "hochschule für gestaltung" Bauhaus in an almost

exemplary manner. At the same time, this study also represents a media-pedagogical paper trail[1] that leads up to the present: In addition to the respect for the material mentioned above, there seem to be certain artistic design principles at play that manifest themselves in the cardboard sheets of Nintendo LABO - principles that, in turn, can be read as serving a socio-political function. These aspects primarily concern learning and educational implications that aim at a practical, playful form of autonomy and, using the terms of reform pedagogy,[2] could make people "learning and thinking beings" (Röhrs 2001, 23). Linked to this is the idea that we must abandon well-trodden teaching and learning routines and experiment with entirely new educational methods in order to lay the foundation for a holistic social reorientation; a reorientation that is appropriate for contemporary demands. This is also directly reflected in the concept of the Bauhaus:

> "The responsibility of the Bauhaus is to educate people who recognise the world in which they live and who, out of the combination of their knowledge and their acquired skills, conceive and design typical forms that symbolise this world."
>
> (Gropius, cited in Friedewald 2016, 29)

The basic ideas postulated by the Bauhaus have been experiencing a kind of revival for years now, which is continuing in certain areas of work - such as the so-called creative industries and the excesses of "late-modern aesthetic capitalism," (Eikmeyer et al. 2019, 3). where the motto of Bauhaus master Johannes Itten "Play becomes festival - festival becomes work - work becomes play" (Itten/Rotzler 1978, 69) is being undermined by the

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1 This search for traces is based in significant parts on the carefully selected exhibits of the exhibition BAU [SPIEL] HAUS, which took place at the Neues Museum in Nuremberg from March 22 to June 16, 2019 and was curated by Prof. Dr. Thomas Hensel and Prof. Dr. Robert Eikmeyer - my heartfelt thanks go to both curators for their work, to whom I owe the idea for this text.

2 Röhrs divides the work of reform pedagogy into different phases: from 1890 to ca. 1912 he sees the "first phase [...] of the critique of the old school", ca. 1912-1924 as a phase in which "individual reform attempts emerge from their isolation and discover in the discussion what is common in their basic pedagogical attitude" and 1924-1933 as a phase of theoretical clarification and preparation of the "yield" for "broad pedagogical work" (Röhrs 2001, 23, author's own translation).

motto "Work Hard - Play Hard." Bauhaus principles can also be found at the core of a social "pioneer community," (Hepp 2018) to which LABO seems to link directly with its concept of the maker movement (Gershenfeld 2007; Anderson 2012). Making closes the gap between craft and art, Bauhaus and experimental games, and finally between the process of DIY and Nintendo LABO. The fact that this approach repeatedly leads to commercialization and commodification in both the Bauhaus, the maker movement and Nintendo LABO is by no means without a certain irony, which we will return to in the conclusion of this contribution.

2. PAPER-FOLDING TOWARDS A BETTER WORLD: THE PRE-COURSE AND PLAYFUL DESIGN AT THE BAUHAUS

Without taking into account a fundamental need for social orientation in the corresponding epochs, the aforementioned media pedagogical paper trail that is traced here would hardly be conceivable. This concerns not only the history of the Bauhaus, of which many writings emphasise that the need for orientation became increasingly palpable after the catastrophe of the First World War and the collapse of the German empire before the Weimar Republic: It equally concerns our present (albeit for completely different reasons), which is often described as post-digital (Berry/Dieter 2016) – and in which numerous questions are repeatedly raised about the meaning and appropriate use of new information technologies. One point of reference here would be the high-profile Dagstuhl Declaration in Germany, which was adopted by the Gesellschaft für Informatik (Society for Computer Sciences) in 2016. In this political declaration, it can be read that

> "the core tasks of general education, such as the promotion of a sense of responsibility, the ability to judge, creativity, self-determination, participation and the ability to take part in working life under the changed conditions [of digitalisation, HCS], must be redefined. In order to cope with these tasks, the contents and competences of computer science and media education must be linked and made compulsory in the curriculum of all types of schools."
>
> (Brinda et al. 2016)

So where in the current discourse - regarding socio-political issues as well as in media studies - new media formations and phenomena of digitalization are directly linked to educational issues, Herzogenrath, for example, writes that in the 1920s, "most intellectuals [hoped] for a fundamental change" and "artists [saw] the time for the realisation of new ideas." (Herzogenrath 1988, 19).

Now as before, this spirit of renewal is mixed with educational reform ideas formulated in Germany at the end of the 19th century and in the early 20th century, especially by influential educators such as Pestalozzi, Fröbel and Montessori. They also included a rejection of established ideas about how young people who were responsible for shaping everyday life should be educated. While the ideals of such an education are clearly evident in Gropius' Bauhaus Manifesto of 1919,[3] the concrete implementation of these new forms of teaching can be seen through the preliminary courses already mentioned above, which "remain one of the most important innovations in Gropius' Bauhaus teaching structure to this day." (Droste 2018, 16).

The preliminary course was significantly designed by the Swiss artist Johannes Itten. Itten was not only a painter and art theorist, but as a former school teacher, he also incorporated many reform pedagogical approaches into his teaching concept. According to Herzogenrath, Itten was concerned with "exorcising all previously learned art skills from the students, throwing them into chaos, [in order] to create the basis of a new order. The playful element was to replace tradition." (Kraus 1988, 53) This preliminary course was compulsory for all new students, and only those who passed it could continue their studies at the Bauhaus. However, Itten was not only concerned with "cleansing the students of the dross of formal conventions and traditional, academically entrenched aesthetic ideas

3 After the programmatic sentence "the final goal of all artistic activities is the building!" Gropius emphasizes in the short document the importance of overcoming the "self-sufficient peculiarities" of architects, painters and sculptors and a unification of the arts to be pursued from this; the return to craftsmanship as well as the abolition of "class-separating pretensions" between artists and craftsmen in order to create "the new building of the future", which should function as a "crystal symbol of a new coming faith" (Gropius 1919, cited in Droste 2018, 14).

and practices," (Wick 2019) but also with re-evaluations and playful approaches to artistic material in which there were apparently no taboos. Excursions to landfills and junkyards were the order of the day - here, experimental assemblages, collages and sculptures were constructed from *objets trouvés* and unconventional material. In 1931, Bauhaus student Hans Keßler remembers:

> "you learn to play like a child again, you learn to get properties out of a material that you didn't recognize before - that's what the inventor does [...] and in order to represent this material, anything goes: use excrements, for all I care! Only one thing is forbidden: being stupid [sic]."
>
> (ibid., 19, author's own translation)

After Itten left the Bauhaus in 1923 following lengthy conflicts with Gropius, the Hungarian painter and photographer László Moholy-Nagy took over the direction of the preliminary course. In contrast to his predecessor, who incorporated a nature-loving, spiritual and partly occult affinity into his teaching, (ibid., 36) Moholy-Nagy had a particularly positive attitude towards mechanical and technical processes. He pursued the goal of "providing students with insights into elementary design categories [...] and [...] a fundamental understanding of the properties and characteristic behaviour of different materials through their own experimental activity (the principle of 'learning by doing')." (Wick 2019). While Itten constructed illustrious sculptural buildings with his students from an eclectic mix of materials, Moholy-Nagy's approach was also more formalistic and minimalist. This is expressed not only in his weight studies, which are reduced to the necessary and filigree, and the conceptual distinctions he established 'objectively', such as "structure (inner composition [innerer Gefügeaufbau]), texture (epidermis natural) and facture (epidermis artificial)," (ibid.) but also in the choice of supposedly simple materials - such as paper or cardboard.

Josef Albers, cited at the beginning of this article, was the third and last preliminary course teacher at the Bauhaus to consistently continue the minimalist approach to materials. In doing so, he further developed many pedagogical ideas that had already been shaped by Itten and Moholy-

Nagy. Similar to Moholy-Nagy, he propagated "an educational concept that can be reduced to the brief formula 'learning through experience'" (ibid.) and forced creative material exercises with paper. This is how Albers describes it in 1924:

> "Example: Paper is used outside (in craft and industry) mostly lying and flat and glued, one side of the paper usually loses its expression, the edge is almost never used. This gives us the opportunity to use paper upright, uneven, plastically moved, on both sides and with an emphasis on the edges. Instead of gluing, we will bind, tuck, sew, rivet, i.e. fasten it differently and examine its performance under tensile and compressive stress. The material treatment is therefore deliberately different from outside, [...] not to imitate, but to search for ourselves and to learn to find things ourselves – constructive thinking."
>
> (Albers, cited in Wick 2019)

"Constructive thinking" - not unlike what many years later the educator and mathematician Seymour Papert would call constructionism - represents a core idea of Bauhaus teaching. With Papert, it could be said at this point that the actual construction activity thus also gives rise to ideas and models in the learners' minds with which mental constructions can equally be built, repaired and "mended." In Albers' work, paper therefore actually becomes not so much a collage as a bricolage - Papert borrows a core idea from Lévi-Strauss here - and "the main principles of bricolage as a methodology for mental activity are: Take what you have, improvise, make do" (Papert, cited in Fütterer/Jonas 2012, 239). Albers, however, was not only concerned with a more "practical" form of teaching, but with nothing less than making a contribution to a better world; a world in which teaching content is not blindly learned by heart and "regurgitated" in exams, but in which new things are "created" and old things are no longer merely "shuffled around" (Albers, cited in Wick 2019). The act of folding paper can thus not only be understood as a creative restriction to a simple material, in which extremely complex and elaborate arrangements can be produced by supposedly simple hand movements. Paper folding represents an act of manipulating three-dimensional space, to which Friedrich Fröbel - the inventor of the kindergarten and most likely a decisive initiator of teaching at the Bauhaus - had already attached great importance in his concepts

on pedagogical gifts of play. It is thus a symbolic act with which an ostensibly playful process is taken seriously as a means to an end in order to actively participate in shaping society.

In summary, these spotlights on the conception of the preliminary course make three things clear: The Bauhaus embraced (1) a rejection of traditional pedagogical approaches, (2) a fundamental re-evaluation of possibilities and the radical simplification of artistic material, and (3) an experimental, playful approach that is explicitly constructive in character. Michael Siebenbrodt therefore notes that "the Bauhaus [thus] became the first state university in which creative play/creativity training and teamwork became part of the pedagogical programme and a classroom reality as early as 1919." (Siebenbrodt 2004, 25). This playful impulse can be traced throughout the history of the Bauhaus by looking at the actual toys designed by Alma Siedhoff-Buscher, for example, which made her famous; such a line of tradition could also be continued with the history of the building sets that Lionel Feiniger made privately for his children, for example, and that can be understood in art historical terms as "the architect's favourite game" (Noell 2013) - and which in turn lead in a direct ancestral line to Lego bricks. However, it is not only the building blocks, the shipbuilding kits, the modulable children's rooms and the doll houses on which the Bauhaus had (and still has) a formative influence. Rather, the influence can also be found in current developments in (computer) game culture, which manifests itself, for example, in unusual products such as Nintendo Labo - although there is yet another cultural phenomenon that needs to be highlighted first.

3. DESSAU, MEXICO AND BACK: MAKING AND MEDIA LITERACY

Amor Muñoz, who studied law and is an artist, developed the project *Yuca_Tech: Energy by Hand* in the Mexican state of Yucatán. The project is a kind of "community technology lab" in which traditional handicrafts are combined with the principles of the maker movement at the level of citizen engagement. The focus is on economic and social development as

well as on promoting the realization that everyone is capable of developing technologies in a simple way without having to go through years of formal educational institutions. In Muñoz's project, indigenous materials - such as dried agave leaves - are used by former seamstresses of a textile factory to equip sun hats and sandals with solar panels, batteries and LEDs. The result is "smart" textiles that generate a vital resource in the infrastructurally disadvantaged Mayan areas of Yucatán: electric light based on renewable energy.

> "This project is all about collaboration and participation. The intention behind it was also to combine traditional arts and crafts with the do-it-yourself spirit, with the maker movement, and to bring arts and crafts and technology closer together."
>
> (Muñoz in Ranke 2019)

An important starting point for Muñoz is the work of Anni Albers, Josef Albers' wife, who taught with him at Black Mountain College in North Carolina after the Bauhaus closed and who, during her travels, began to take an interest in the traditional weaving techniques of Central and Latin America. Muñoz draws a parallel between her own work and that of Annie Albers, who, during her stay at Black Mountain College, had to

> "cope with the conditions on site. There weren't very many materials. That's when she started using natural materials. Pasture grass, bushes, eucalyptus, jute... She interwove them with industrial materials. Just like we do at Yuca_Tech. [...] Bauhaus is present in many parts of Latin America. There is a strong connection. And here, in this little utopia, in these little experiments, you see that. Albeit on a small scale. But that's what the founding of the Bauhaus was all about."
>
> (Muñoz in Ranke 2019)

According to publicist Chris Anderson, the so-called "maker movement" is characterized by three main features: the use of modern hardware and software to design products independently by means of private fabrication and to produce their own prototypes; the tendency to share in online communities; and the use of standardized file types that radically simplify the production and scaling of prototypes. Anderson sees the emergence

and proliferation of typical maker tools - 3D printers, laser cutters and micro-controllers - as an opportunity to bring the spirit of the do-it-yourself movement into the sphere of entrepreneurship. In his book, he thus develops nothing less than the idea of a global economic-political redevelopment, which is underlined once again in his last chapter "The West can rise again" (Anderson 2012, 298).

However, Muñoz's Yuca_Tech project clearly shows that Anderson's vision of Making can also have quite different ideological implications. In the case of the seamstresses of Yucatán, making does not mean a renaissance so much as independence from large corporations, expressed through simple forms of infrastructural and communal autonomy. Making thus also builds a bridge between the social utopian ideal of the Bauhaus and the emancipatory potential of the maker movement: both movements not only appropriate simple and industrial materials and try to improve daily life through creative design drafts; they also share certain political ideals, which, for example, is summed up by Andrea Baier et al. in the succinct formula 'repairing the world' (Baier et al. 2016) in their anthology of the same name.

Which ideological attributions Making actually undergoes remains a process of negotiation between the actors. But the fact that Making has a significant pedagogical meaning can hardly be denied when examining the secondary literature. Neil Gershenfeld, for example, who offered one of the first Making courses ever in his MIT seminar "How to Make Almost Anything" in 2001, writes that he was surprised not so much by his students' willingness to learn, but above all by their needs and motivations:

> "Virtually no one was doing this for research. Instead, they were motivated by the desire to make things they'd always wanted, but that didn't exist. These ranged from practical (an alarm clock that needs to be wrestled into turning off), to fanciful (a Web browser for parrots), to profoundly quirky (a portable personal space for screaming). Their inspiration wasn't professional; it was personal. The goal was not to publish a paper, or file a patent, or market a product. Rather, their motivation was their own pleasure in making and using their inventions."
>
> (Gershenfeld 2007, 12-13)

Unlike in the Bauhaus preliminary course, where traditional ideas about the artistic and craftsmanlike possibilities of a supposedly simple material like paper had to be laboriously overcome in the students' minds, Gershenfeld's students were literally burning to let off steam with the new possibilities of supposedly familiar materials - simple, but now self-programmable electronic parts. Their driving force was a need for personal expression in the everyday objects of their everyday lives; a desire for individuality rather than conformity. However, the three characteristics of the preliminary course highlighted above remain: the rejection of earlier pedagogical approaches, the re-evaluation of possibilities and the simplification of material, as well as an experimental, playful and constructive approach. Simply put, one could also say that "der neue Mensch," or the new person, who blossomed at the Bauhaus in the 1920s through the advantages of serial fabrication and functional formal language, is once again a playing human of the early 21st century, a kind of Homo Ludens 2.0 (Raessens 2012) who constructively and experimentally gains access to areas that are normally inaccessible to him.

According to Gershenfeld, this manifests itself in a completely new form of perception and expression - a literacy that is not "merely" artistic, scientific or craft-related, but overcomes this division in the best Bauhaus manner:

> "I began to realize that these students were doing much more than taking a class; they were inventing a new physical notion of literacy. The common understanding of "literacy" has narrowed down to reading and writing, but when the term emerged in the Renaissance it had a much broader meaning as a mastery of the available means of expression. However, physical fabrication was thrown out as an "illiberal art," pursued for mere commercial gain. These students were correcting a historical error, using millions of dollars' worth of machinery for technological expression every bit as eloquent as a sonnet or a painting."
>
> (Gershenfeld 2007, 14)

If the artistic production of (technical) things actually also presupposes a playful form of literacy in the broadest sense - a "mastery of the available means of expression" - then it also requires, not least, a place where this literacy is learned and developed. Where the media educators Henrike

Boy and Gerda Sieben consider a formalization through workshops desirable, it can be equally attested that such a literacy could also be initiated by a process of playful learning from a completely different place.

4. LEARNING BY PLAYING, LEARNING FROM PLAYING: NINTENDO LABO AND LUDIC LITERACIES

> "To go ahead and share my impressions up front: I think that *Nintendo Labo* beats the pants off of something like *Maths Blaster* [sic]. I grew up during an edutainment boom that had my school equipped with *Maths Blaster* [sic], *Carmen Sandiego* and *Oregon Trail*. And while I can't confidently testify that those games managed to educate me about their subject material I candidly say that they sure did get me used to using computers."
>
> (Weidman 2019)

Journalist and YouTube creator George Weidman is visibly impressed by Nintendo Labo. The reason for this is that he not only sees a didactically meaningful continuation of so-called educational games such as *Math Blaster* at work here, but he primarily sees an opportunity for children to learn the basics of how closed systems work - using a very simple material such as cardboard. However, Weidman's video is particularly informative for the topic of this essay precisely because it does not represent a typical review. Instead, Weidman draws a direct historical line with Nintendo LABO to educational toys, or more precisely: to the Froebel gifts already briefly mentioned above.

According to Claudia Marquart, these play materials aim to convey abstract forms in a sensual way - through "play gifts" such as cylinders, spheres and cubes, which are to be handed out for play in a fixed sequence at certain stages of child development. Fröbel, a trained crystallographer who was accustomed to paying attention to internal compositions instead of external forms, thus designed a system in which certain laws of nature and certain material properties were to be made intuitively comprehensible. In this way, a rotating wooden ball on a string becomes an illustration for centrifugal and rotational forces. "The system of 'play gifts' that build on one another stands out from the construction kits of the time above all

because of its reduced form and manageable number of elements," (Marquardt 2019, 22) writes Marquardt - and emphasizes that "the harmonious relationship to the whole was to be taught through division and combination." This is also particularly evident in Fröbel's pedagogical "Instructions for Paper Folding," (Fröbel 1862) which, in the spirit of this essay, almost inevitably finds a continuation in Nintendo Labo. Weidman further notes about the connection between the Froebel gifts and Nintendo Labo:

> "No instructions were supposed to be included, just simple enough pieces to get kids discovering how the toys work on their own. Likewise, Nintendo Labo has kids punching out basic sheets of basic shapes that gradually turn into complicated moving interactable 3-dimensional in real life objects with weight and texture and moving parts that all make a brilliant kind of sense that you learn as you snap it all together. Even as an adult the steps where all these strange looking pieces finally come together to look like something that's on the cover of the box triggers a 'Oh, so that's how it works!'"
>
> (Weidman 2019)

Nintendo LABO thus appears to be not only a construction kit for aspiring makers ("Make it your own!" is written in large letters on the box), but also a construction kit that teaches certain technical processes through the medium of computer games. Of course, the question is whether Nintendo LABO actually promotes a playful literacy - or even a literacy of video games and their computional hardware.

Terminologically, such a judgement would be too hasty. José Zagal, for example, points out right at the beginning of his study "Ludoliteracy" that such literacy must at least be understood as multidimensional in order to do it justice. Consequently, Zagal concentrates on only one aspect of ludoliteracy, which he then breaks down into smaller components: the ability "to understand meanings with respect to games" (Zagal 2010, 23). Zagal divides such an ability to understand the meaning(s) of games along four axes: (1) Games in their cultural context (for example, as adaptations of esthetic and narrative topoi), (2) Games in the context of other games (for example, the extent to which classic "war games" or pen & paper role-playing games function as precursors to digital games), (3) games in the context of the status quo of technology and how this predetermines and

frames the game experience (graphical limitations, complex or less complex interfaces), and (4) games in the context of their game mechanics (such as the constant progression through the combination of new items in a game of the Zelda series) (Zagal 2010, 32).

To speak of cultivating that kind of ludoliteracy does not seem particularly adequate in the case of Nintendo Labo. Rather, the term should be understood in Gershenfeld's sense: less as a literacy of (digital) games, but rather as a constructionist, playful literacy. Such a literacy would consist of the ability to reveal technical processes, to understand their systematic connections and to be able to manipulate them in a playful way. Since the Nintendo LABO kits are primarily about the construction of pre-designed models, however, it initially seems diametrically opposed to the approaches of Fröbel and the preliminary course at the Bauhaus. At first glance, a typical construction process in Nintendo LABO resembles the simplest and most memorable Ikea building instructions imaginable (including interactive 3D animations accompanied by funk melodies that can not only be paused, rewound and accelerated, but also rotated and zoomed in). However, the game's modes, which can be unlocked after the construction of the first models, lose none of the complexity that Albers would have admired in the paper folds of his students. The "Discovery" mode deserves special mention here: It allows players to take a look behind the workings of the models that are to be built. For example, it is shown step by step how the (actually invisible) infrared camera in the Joy-Con game pads receives signals through the reflective light strips in the cardboard piano that react to the pressing of the piano keys. In addition, the so-called Toy-Con Garage offers a rudimentary programming language to control the sensors and output devices of the Switch console with simple "if-then" commands. Here, kids are able to step out of the realm of pre-designed models and unlock other possibilities: From homemade roulette tables to a recreated Fire game of the legendary Game & Watch handhelds of the 1980s to a solar-powered accordion, the examples of self-creations are manifold (Vincent 2019). "And just like that,"

Weidman sums up, "children are gonna realise that their entire perspective of their entire world that they've known their entire lives has been limited by their inescapable human senses." (Weidman 2019).

The ludic literacy, as exemplified by Bauhaus, the maker movement and Nintendo Labo, is thus less a "Ludoliteracy" in the sense of José Zagal - that is, a literacy that is needed to be able to "read" and understand the content-related meaning of digital games as cultural artefacts - but much more a "Gaming Literacy" in the sense defined by Eric Zimmerman. With this term, Zimmerman is already playing a game on the level of terminology itself: he uses it to denote a view behind systemic processes and their appropriation through play. In the context of the anthology "(Re)Searching the Digital Bauhaus," Zimmerman describes gaming literacy as

> "exploiting or taking clever advantage of something. Gaming a system, means finding hidden shortcuts and cheats, and bending and modifying rules in order to move through the system more efficiently – perhaps to misbehave, perhaps to change that system for the better."
>
> (Zimmerman 2009, 182)

The connection between the three areas of Labo, Bauhaus and Making is thus less the clear and functional formal design language for which the Bauhaus has mistakenly (Herzogenrath/Kraus 2019) become famous. Neither in LABO nor in the products of the maker movement will we find a holistic abandonment of historicism or ornamental decoration. Instead, the overview provided here can be read to highlight the emancipatory, reformist and democratizing ideas - and ideals - that are articulated precisely through the way the material is treated, always requiring a playful, experimental approach. With the act of folding paper in Nintendo Labo, we not only create something new from the supposedly familiar; we also learn how the (technical) things around us work. We open black boxes and are invited to play with them.

Whether concrete, glass, microcontrollers, laser cutters, paper or cardboard: through the process of playing with the material, attributions and instructions for action emerge; ideas manifest themselves in it, they become impulse drivers and "ignition aids" (Marquardt 2019) for the work on

social utopias. The fact that these utopias have their - literal - price is another matter: just as the Bauhaus products advanced to become real luxury goods and sought-after design objects despite (or precisely because of) their claim to being different from other consumer products, it must also be said for the maker movement that it is not an (exclusively) grassroots movement, but also has the characteristics of a carefully "curated" franchise model protected by a high level of corporate law. Its threads come together in the Maker Media Company, which decides where, how and by whom so-called "Maker Faires" may be held (Hepp 2018). And so, despite his great enthusiasm for Nintendo Labo, Weidman also judges that "this stuff ain't cheap" (Weidman 2019) - and such 21st century Froebel gifts cannot be made available to all homes or schools on a large scale. But just as the Bauhaus utopias conceived early on and the educational potential of the maker movement find actual realization in unforeseen places - such as Yucatán - the cost factor alone should not be a reason not to be more optimistic about the future of these promising play materials:

> "Having a versatile suite of skills to survive the changing times is so important, and education is the golden ticket to learning those skills, to break out of poverty and achieve financial security. So, I want to see Nintendo try and strike some deals to lower this price enough to get it into classrooms, because as cheesy patronizing entertainment videogames are becoming a thing of the past, then hopefully slick playful and respectful demo kits in which kids create actual electronics in real life will be the future of edutainment."
>
> (ibid.)

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LYONEL FEININGER'S LOCOMOTIVES AND TRAINS

Experiencing Materials and Colors Through Toys as Learning Materials at the Bauhaus

Ina Scheffler

ABSTRACT

This paper focuses on the "Block-Eisenbahn" (block train), a particular work by Lyonel Feininger, one of the first masters appointed to the Bauhaus in 1919. The block train's main characteristics are internationality, model consistency and unbreakability – and it is one example of how material and color experiences through toys were discussed in different frames of reference in the context of the Bauhaus. These works were developed, discussed and commercialized in various situations and taken seriously as learning material, but above all, they represented a design task in teaching. Feininger used the term 'model' when explaining his work. A model is a representation of an object and all of its physical properties, but not an exact reproduction. Through models, central features of an object are represented abstractly and perhaps even highlighted. This negotiation and upheaval of the original exemplifies how toys, if they are taken seriously and if their innovative strength is acknowledged, can serve as a starting point for educational and didactic figures of thought.

Keywords: games, play, art, education, Bauhaus

1. TOYS AS A DESIGN TASK

> "I could imagine that adults could like my railroads, or did like them when they were children, might buy my models and use them for decoration."
>
> (Feininger/Feininger 1965, 28)

This is how Lyonel Feininger commented on his block train in a conversation with Julie Feininger on May 13, 1913. As early as 1913, on commission from a toy manufacturer, he was concerned with the form, colorfulness, functionality and design of toys. He designed railways made of hardwood (ibid.). In the introductory quote above, he uses the term 'models,' which encompasses the object-like representation of an object and all its physical characteristics, but at the same time does not represent an exact reproduction, but rather abstracts and, under certain circumstances, highlights central characteristics. In this way, the original fades into the background and its qualities, deficits or particularly outstanding features come to the fore. Models can be over-sized or miniature versions of the original. In play, the immense size of the world is made tangible and explored (Hartung 2014, 66). One variation of this game is the play with proportions and the reversal of habits of seeing and touching. Here, the scale is reversed: houses become miniatures and mice are greatly enlarged as stuffed toys. Role changes are also possible through playing with models. This kind of play allows the child to become a world leader and inventor, to combine and to create, but also to dismantle what it has willingly created. It can happen within a fixed framework, following rules like those of Josef Hartwig's chess game,[1] but also in free play with its infinite possibilities of addition, maximization and reduction, combination, concretization and abstraction. Like any other toy, the miniatures have the potential to captivate the players, thus immersing them in play on a small scale, making them forget everything around them. One aspect of this potential is

1 Josef Hartwig's chess game exemplifies the cooperation between the various workshops; Heinz Nösselt constructed a chess table in the joinery, while the student Joost Schmidt designed posters, printed matter and an advertising poster (Droste 1990, 95).

that toys in other formats, with other color schemes or material changes, play a game with similarity logics through unusual scales.

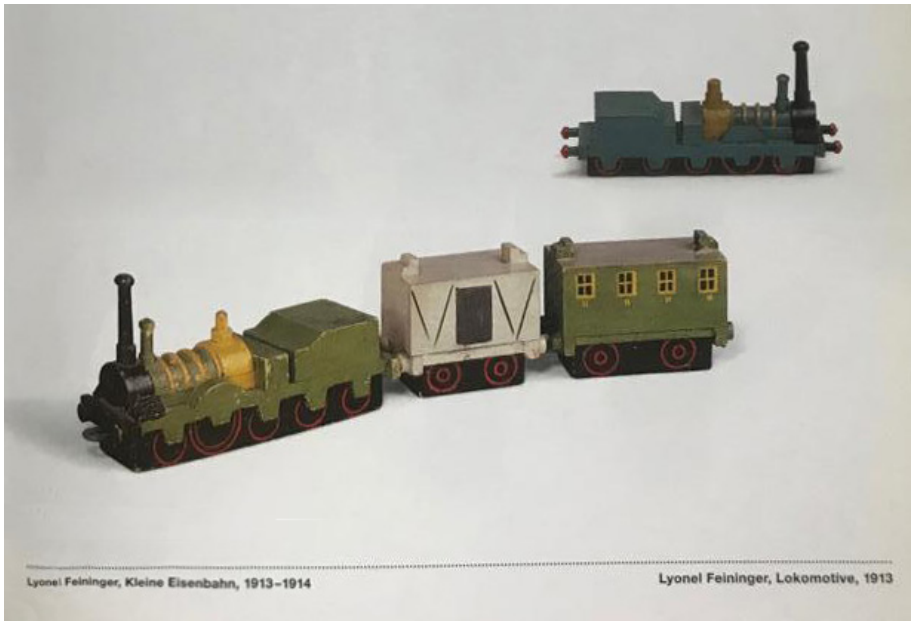

Fig. 1: Lyonel Feininger: "Kleine Eisenbahn", 1913-1914 (bottom left); Lyonel Feininger: "Lokomotive", 1913 (top right).

Toy trains are as old as railways themselves, and they were already popular and widespread in the mid-19th century (Baecker/Wagner 1985, 4). Literature unanimously regards them as a typical product of the Industrial Revolution. Here, toy trains became mass-produced and obtaining them became easier as they were available in many places and comparatively low in price. The railway movement, the smooth glide of the long chain of carriages, was also an innovation that only became possible in the phase of industrialization through technical innovations such as the rail. Toy trains imitated a typical means of transport of industrialization.

As early as 1911, Lyonel Feininger had begun to develop construction drawings for wooden toy trains on behalf of the Munich toy manufacturer *Löwenstein*. These drawings already show an important detail that Feininger created: instead of movable wheels, he developed a sliding block with wheels that were painted on. This not only made the miniature easier and cheaper to produce, but also provided an interesting way to imitate

the sliding of the trains' rollers on smooth surfaces. This innovation was very important to Feininger and he patented the idea. According to letters he wrote, he planned on developing mass-produced items for the toy industry by designing model trains. In a letter to his wife Julie from April 7, 1913, he noted:

> "I see in the idea of model trains an inexhaustible source of the most piquan, most charming possibilities. I am now at work, as if I were caring for the future in material terms; My [sic!] idea is also to design an article for world trade."
>
> (Mesinovic 2004, 216, author's own translation)

In the same letter, Feininger also explained "I even want to make some of the original trains [...] And the things are to be labeled, and called by the name of the old railway company, this is the main hit with them. Models should have seasons, and names like Rocket, Lady of the Lake, John, etc." (ibid., author's own translation). Modern was the design and the idea of the products, but they were to be assembled and painted by hand. The beginning of the First World War, however, destroyed this idea, and after Löwenstein's death in the 1920s, the box of prototypes was sent back to Feininger.

In Germany, the first toy train made of simple tin plate entered the market in 1835. The production of the *Märklin* company became commercially important when it presented a wind-up railway with a complete track system at the Leipzig Toy Fair in 1891 (ibid., 215-218). When the railway was invented in 1801, this also marked the beginning of the creation of models that were as faithful to the original as possible. These models focused particularly on technology and function, and were neither intended for children nor for play; they used methylated spirits to run the steam engines, exactly like the large models, and served as entertainment for adults. It was not until 1912 that engineer Karl Moritz advocated for the use of transformers that could regulate the power now needed for propulsion down to a harmless voltage (Feininger/Feininger 1965, 28).

2. TOYS IN RELATION TO PEDAGOGICAL AND DIDACTIC FIGURES OF THOUGHT

With his trains, Lyonel Feininger, who was one of the first masters to be appointed to the Bauhaus in 1919 (Fromm 2009), pursued the ambitious goal of developing a classic toy comparable in its significance and innovative power to the *Anker* brick building set, which was to become commercially successful at the same time as Feininger's model train. Building blocks in *Anker* boxes are molded parts, pressed and baked from sand, whiting (powdered and washed white chalk), and linseed oil. Like the three traditional materials used in construction – brick, sandstone and slate – they are produced in the colors red, yellow and blue. Unlike *Lego* bricks, for example, they are completely smooth. Building with the *Anker* bricks is all about statics. In contrast to *Lego*, the idea of the combinable building set is based on an educational concept. The educationalist Friedrich Fröbel developed the didactic figure
of the 'play gifts' (*Spielgaben*). Due to the system of supplementary boxes that build on each other with enclosed building instructions, the architecture and model game, invented in Rudolstadt in 1882 by the brothers Gustav and Otto Lilienthal, is considered the prototype of the system toy (Werner 2016, 302-303).

Feininger's toys were not that developed and didactically sound. While Feininger did not refer to didactic or pedagogical literature, he did observe didactic and general pedagogical issues in his personal environment – and he used these observations when developing his projects. His target groups were "[...] every real boy and most grown-ups" (Feininger/Feininger 1965, 28). When the First World War put an end to these plans, Feininger had already registered his name as a trademark for the manufacture and sale of toys and had developed packaging labels with the inscription *Feininger* (Tietze 2001, 114). Furthermore, the packaging labels with the inscription "Lyonel Feininger's Block Railway, International. True to model. Unbreakable" (in German: "Lyonel Feiningers Block-Eisenbahn, International. Modellgetreu. Unzerbrechlich") had already been

printed (ibid.). The sliding block of the railways was an invention of Feininger, who had it patented. As a child, Florian Karsch, the nephew of the gallery brothers Karl and Josef Nierendorf, first from Cologne and later from Berlin, played with Feininger's trains. He grew up surrounded by the artists represented by the gallery and their works. These included Expressionists such as Erich Heckel, Emil Nolde and Karl Schmitt-Rottluff. Initially unknown artists such as the art teacher and painter Lorenz Humburg, the photographer Karl Blossfeldt, and the New Objectivity painter Ernst Thoms were part of the Berlin environment (Walter-Ris 2003). Karsch was disappointed by Feininger's train as a child: "It didn't move!" (Luyken 2004, 36, author's own translation).

As creative works that adapted to the conditions of industrial production, Feininger's model trains anticipated a central Bauhaus founding idea. It is therefore surprising that Feininger, once appointed to the Bauhaus, continued to design toys for children, but now primarily individual pieces. They were developed and manufactured for his own three sons or for friends' children and Bauhaus colleagues. They were houses, bridges, trees and figures made of spruce wood and painted in bright colors. Twisted medieval buildings and village churches based on real models from small Thuringian towns such as Gelmeroda were the models for the houses. Feininger's deployable little houses were reminiscent of Dagobert Peche's city construction kit (ibid., 35-36).

Peche was initially a member of the *Wiener Werkstätten* (Vienna Workshop). In 1916, after successfully organizing the Vienna Fashion Exhibition of 1915/16, Peche became the director of its Zurich branch. The Vienna Workshop had also been producing artistic toys since it was established in 1903. These were characterized by very individual approaches. Its stylistically confident range can be demonstrated very well by the example of two city construction kits designed by Josef Hoffmann and Dagobert Peche. Peche chose angular medieval gabled houses as models for his town toys created around 1918. No two houses were alike, each of the pastel-colored buildings was elaborately decorated with patterns. As packaging, the artist designed a box divided into compartments and lined with mirrors. While the mirrors set off the buildings already in the box, the

sophistication of the packaging also meant that the city building set was at best suitable for older children and/or those who can sit still for longer periods of time. Interestingly, Hoffmann, who was otherwise rather critical of Peche's toys, thought the construction set was exemplary. Two years later, however, Hoffmann himself arrived at a radically different solution: an ultra-modern play city with factory chimneys and skyscrapers. His building blocks, reduced to a few basic shapes, are extremely sparing, with lines symbolizing the endless window fronts of skyscrapers (Luyken 2004, 35-36). Bruno Taut formulates the examination of the phenomenon of play very freely in a newsletter of the artist community *Gläserne Kette* (The Crystal Chain):

> "In the style, the game is the goal,
>
> In the game, the goal is the style,
>
> At the goal, the style is the game."
>
> (Döhl 1988, 122)

In this context, play is understood without function or pedagogical intentions, ulterior motives, effects or programs. This open attitude is also reflected in the miniature houses of Peche, Hoffmann and Feininger. The artists worked with building templates and did not pursue any pedagogical intentions. But while Peche's houses remained decorated elements based on medieval models and components of a construction kit, Feininger's wayward buildings can also be seen individually as sculptures in miniature format that deviated from real or historical models, developing into their own interpretations. Here, experimentation with size and its significance for the work become artistic themes alongside form and materiality: "If you got it, you can be monumental – even on a stamp" (Bellini 2012, 35, author's own translation).

While Feininger's designs would have been suitable for other groups of people, they remained in the Bauhaus environment (Luyken 2004, 35-36). Their thematic spectrum was wide and could also have been used in an industrial-commercial context, as there were flexible and infinitely combinable elements, such as houses, bridges, trees and figures made of

spruce wood, painted in bright colors. Their simplicity, combinability and colorful design is comparable to early *Lego* designs. Through the idea of historical reference and the resulting similarities and references, Feininger resumed an approach that he had already pursued in the context of his railways. Another means of designing miniatures, especially in areas such as architecture, model making and urban planning, is the maxim of exact, albeit abstracted and/or reduced representation. In contemporary and historical toy worlds, a spectrum of similarities is depicted in different materials, forms, scales, combinations and degrees of abstraction. These observations give reason to assume that the design task for toys and play materials arises directly from the task of thematizing life in all its forms of design as formulated by Gropius, especially in the context of the Bauhaus (Gropius 1926, cited from Conrads 2011, 47). The toys reveal a series of design tasks and assignments that relate to form, function and materiality. Thus, Lyonel Feininger's works also show a preoccupation with scale and fidelity to scale, but an artistic will to design is in the foreground. This is particularly clearly formulated in his letters. In these, he states that the consequence of working on the design task and with the object of the toy was a reflection on his own artistic work. Far from model railway landscapes, as an artist Feininger formulated and experimented with a free form of design without prioritizing feasibility or realism.

References to reality can also be seen in Claude Lévi-Strauss' *The Savage Mind*. Here, Lévi-Strauss (1968, 92) deals with hobbyist and engineer models and contrasts them. He describes that the hobbyist model, in contrast to the engineer model, tries to bring larger dimensions and references back to a manageable scale in order to make reality manageable, or to appropriate it in the first place. Engineering models, on the other hand, refer to the model-like, resilient and realistic recording and representation of technical data. For example, stress, dimensions, properties and materiality can be recorded and summarized in the model. In contrast to these claims of resilience, the German art critic and art sociologist Walter Grasskamp (1980, 62-71) sees the hobbyist model as a built figure with a 'tendency toward cuteness'. Gaston Bachelard (1975, 191) recognizes the miniature as a metaphysical balancing exercise that makes it possible to

be value-creating with little risk (ibid.). Like the architectural model, this is also an exploration of scale.

3. ARTISTS' TOYS AS PART OF TEACHING AT THE BAUHAUS

Unlike in Feininger's artistic work, the market and marketing remained important components of the design processes at the Bauhaus. In the preliminary teaching of the Bauhaus, perception and handling of design elements such as form, color and material were trained. This can be seen in toys and children's furniture that reflect techniques such as woodworking, weaving, typography and photography. Many of the designs by Alma Siedhoff- Buscher, Ludwig Hirschfeld-Mack or Marcel Breuer went into serial production and were successfully marketed (Tietze 2001, 113). In the direct and indirect contemporary environment of the Bauhaus, there was also an intensive examination of artistic designs by and for children. An important aspect of this – also for the art education of the 1950s, which took up many figures of thought from reform pedagogy and the pedagogy of the 1920s in general – was the examination of children's drawings. Important names in this context are Henri Matisse, Pablo Picasso, Paul Klee, Max Ernst, Gabriele Münter and Wassily Kandinsky. Through an intensive examination of children's drawings through observation, collection and reflection, new materials and forms to work with were found – and the resulting toys were made of stone, metal or wood. These were often intensively received and collaboratively created in the Bauhaus environment. For example, in 1923, teaching aids and educational toys were discussed in the work drawing class (Luyken 2004, 35-36). This is particularly interesting as alleged boundaries between particular subjects and field of works were overcome in the process, for example in relation to drawings with artistic ambition and children's drawings, which follow completely different demands and functions. In this context, the traditional role attribution of artists was abolished and expanded to include a preoccupation with children's drawings. This expansion is already indicated in the ideas of the artists who can be attributed to Viennese Art Nouveau. Here,

all areas of daily life culminated in the idea of the *Gesamtkunstwerk* ("synthesis of the arts"). The Viennese artists tried to think themselves into the world of the child and added creative elements into this world. These elements were, for example, old forms of folk customs, forgotten techniques and materials that were rediscovered and adapted for the production of children's toys. Something new was therefore created in Vienna by drawing on tradition. Objects for children were created with the awareness that art is created through play, that artistic forms can be traced back to mental playfulness: "There is a piece of artistry in every child – what would the game be other than a kind of art instinct?" (Luyken 2004, 35-36, author's own translation). Art became a principle of life that was supposed to enable adults and children alike to experience new, spiritual freedoms. In *Kind und Kunst*, Konrad Lange describes art and play as complements to life. For him, they become substitutes for a missing or 'lying reality' (Lange 1904, 7-8). Joseph August Lux expressed this in a similar way: " The toy relates to the things of everyday life like the fairy tale to reality" (Lux 1903, 5, author's own translation). The properties, the shape and the colorfulness of things, their characteristics as objects that are to be played with, thus became the occasion for artistic and pedagogical reflections. As Alma Siedhoff-Buscher put it: "Our play toys: the form – simple, unambiguously clear and exact; diversity and attraction is created by the child itself through putting together and building" (Buscher 1924, 189-190, author's own translation). As a representative of the Bauhaus, Siedhoff-Buscher took up concepts and thoughts from the Vienna workshops and expanded them. Many placed emphasis on artistic design and a knowledge of craft skills with a conscious search for further development and expansion. This can be seen in relation to the reflection of scaling and the play with scale relationships and model functions, as with Peche and Hoffmann (Hartung 2014, 25-26).

4. MEASURE AS A MEANS OF DESIGN AND EXPRESSION

The play with scale and measurements and its potential for perception and design was intensively pursued in art history even after the Bauhaus.

Thus, in the art context, at the latest with the emergence of American Minimal Art and Conceptual Art, the question of the model, of the conception of an object as a model, of its functions and potentials becomes relevant. These questions feed artistic models of thought and scaling games on the rationally developed object. On the basis of such works, the variety of attribution possibilities with which something is described as a model becomes clear in the art scene. The concept of a model was originally used in architecture, mediated by the Italian *modello*, and derived from the Latin *modellus* or *modulus*, which means 'small measure' (Oechslin 1995). Furthermore, the Middle High German term model, via the Old High German module with the same Latin etymology, also came to mean pattern or form, which still resonates today in job titles in the fashion industry; it also continues to be used in the field of art in study and design contexts (Mahr 2003). The strategy of shifting scale, exemplified in the monumental sculptures of everyday things that Claes Oldenburg has been designing since the 1960s on the basis of smaller models, is already inherent in the concept of the model itself. In the context of the development of models of thought into actual models, another becomes interesting. Model theorist Bernd Mahr has developed a 'model of being a model':

> "The context in which the object of an object understood as a model stands by the model judgment can be determined in general in its quality and structure. When understanding an object as a model, that object is related by considering it both as a MODEL of something and as a model for something. This dual orientation exists only in the conception of model existence generated by the model judgment."
>
> (Mahr 2008, 202, author's own translation)

This alternation between model character and model-like quality is also evident in Feininger's train, which does not roll, but glides, and which shows wheels, but does not have them. However, the model also shows how the relationship between the creators of the model and the model itself, as well as between the creators and the recipients, changes. The relationship between the viewer and the model is shown in a design on the cover of the reformist educational magazine *Kind und Kunst*. The picture

shows a child with a model. The child, in the pose of the thinker and immersed in the model, becomes the creator of their own world, and seems to be reflecting, planning or designing (see Fig. 2). In this reflection of childhood, markers of the modernization of society as a whole, but subsequently also of the realities of children's lives, become apparent. The large, childlike head and hand are reminiscent of models and miniatures, the double game with scale shows the examination of the question of what role children have and play. If we look into children's rooms a hundred years later, we see an unbroken fascination for the model as well as the recurring questions about the role of children, about the shaping of childhood as well as about toys. The boundless possibilities and themes are depicted in an infinite spectrum.

Fig. 2: Cover of the "Kind und Kunst" magazine (1901).
Fig. 3: Postcard with pictures of young Wilhelm II, German Emperor (1900).

Another child of his time is shown on a postcard from around 1900 (see Fig. 3): it depicts young Wilhelm II, German Emperor-to-be, in four situations. This depiction also shows the interpretation of a child and its role in relation to enlargement and minimization. In each picture, he is dressed like an adult, and it becomes clear how this boy is stylized into an 'adult miniature' through clothing, facial expression and pose. The imperial era also plays a role as a prehistory, as a time from which the *Bauhäusler* (Bauhaus members) emerged, because it forms a kind of foil for the Bauhaus through its political, social and aesthetic circumstances and transformations. Eclecticism and historicism are both an expression of their time and a target for innovation and change. The image of childhood and the ideas of childrens' worlds of experience are also subject to these movements.

Works of different materialities designed by artists for children have so far received limited attention, even though they display an exceptionally high degree of imagination, originality and creativity. However, projects like the exhibition *Art – a Child's Play* (Berlin, 1901) in particular give an initial overview of the work of artists for children. Another aspect that is reflected in historical as well as contemporary discourses is the question of space for individuality and the personal, hence creative freedom of children. This question can be exemplified by *Lego*, especially in relation to the promise that is expressed in *Lego*'s name: "Leg godt," which means "Play well". In additive modular parts – comparable to the *Anker* building set or combinable railways – the early building sets made it possible to transfer basic elements into infinite, free combinations that could be individually filled with content. Currently, however, this potential infinity is in fact being deconstructed through digitalization as well as through strong specifications by the manufacturers and the play worlds developed by them with precise building instructions. Sociologist Harald Welzer (2019, 85) addresses this transition of play and its structures by theorizing it as an allegory of 'dreams of reality' disappearing from the real world. Through the usage of exact construction plans, he sees the emergence of a world of infinite redundancy. This shows that game worlds create spaces

for reality, but also allow them to be shaped, reshaped and further developed. Both restriction and freedom of design will continue to be central pedagogical and artistic aspects of the means, worlds and tasks of play.

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LOSING THE GAME

How Blockchain and NFT Technology Turns Games Into Work and Destroys Humanity in the Process

Claudius Clüver / Max Kanderske

Academic due diligence necessarily leads to caution in classifying ongoing developments: the need to restrict one's focus to certain aspects, the tentative status of one's findings and the fact that researchers have to consider how a strongly worded opinion could impact future career prospects lead to a dynamic in which academics rarely find clear and concise words in formulating a critique of recent phenomena. To evade these pitfalls, Spiel|Formen provides a space for timely critique in the form of an op-ed co-written by changing members of our editorial board.

PLAY, WORK AND DIGITAL CURRENCIES

In this first op-ed, we want to comment on the relationship between certain phenomena of crypto technology – mainly non-fungible tokens (NFTs) – and the gaming world. As one can easily miss the forest for the proverbial trees by getting lost in the financial and technological minutiae of the topic, we deliberately focus on the broad strokes, contextualizing recent developments at the intersection of gaming and cryptocurrency. Even though these might be painfully obvious for anyone observing the discourse and culture around it, we nevertheless feel the need to provide an explicit counterpoint to the notion that NFTs and crypto in general offer exciting or promising technological innovations or that they might be a harmless, nerdy trend. As we will show, the rise and fall of crypto is revealing of a larger trend pervading online, technological, and especially financial cultures as well as of harsh truths about the neoliberal project. These broader insights will remain vitally important, even as current crypto products continue to fizzle out.

Earlier this year, a headline reverberated through the news media: People are making money by playing computer games now! The articles in question focused on the game *Axie Infinity* and its role in ushering in an era of so-called play-to-earn (or play2earn) games underpinned by the power of blockchain technology. Apparently, someone had found a new way to make a profit by paying others to play a game, the distinction being that this time it was a) legal[1] and b) did not involve competing for viewership or prize pools.

That the "dissolution of the border between play and work" presented by Axie Infinity is still newsworthy in 2022 not only highlights the continued need for game studies scholars to critically engage with phenomena that have been variously dubbed as "precarious playbour", "laborious play", "fan work", "click work" etc.; it also prompts us to take a closer look at the specific factors leading up to the - albeit short-lived - popularity of the play2earn model.

Blockchain tech and the cryptosphere have long been linked to the world of online gaming, with cryptocurrency exchange platforms buying copious amounts of advertising space at esports events and sponsoring popular streamers and professional players alike. From a marketing perspective, that seems to be a sensible strategy: in the name of libertarian values like freedom and decentralization, 'gamers' and internet users time and again have rallied against various forms of content moderation and regulation on the web, oftentimes protecting the industry's bottom line and further entrenching pre-existing injustices in the process. This ostensibly libertarian mindset, primarily a strongly felt need to fight for their nerdish fiefdoms against 'overreaching' outside forces, not only rendered gamers susceptible to the courting of Steve Bannon's alt-right, but it also made them an ideal target audience for a supposedly decentralized currency promising protection from governmental influence via its very technological structure.[2]

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1 While the practice of gold farming in MMORPGs already followed a similar business model, gold farmers rarely had the developers' consent and usually violated their terms of service.

2 The connection between gaming and crypto can also be traced back to one of the supposed starting points of crypto's lineage, the works of Neil Stephenson who

The gaming industry on the other hand has its own history of creatively inventing currencies to fit their current business needs. These range from keeping money within proprietary platform ecosystems, to obfuscating how much money players are sinking into their games, right up to preying on their own user bases by designing so-called free-to-play (f2p) games around gambling mechanics; all in the hopes of catching the elusive 'whales', players whose excessive spending habits far outweigh the multitudes of non-paying users. Given these developments, it comes as no surprise that the connection between blockchain tech and the world of online gaming has become even more explicit during the recent growth of the crypto bubble fueled by the rise of NFTs[3]: 'play2earn', the 'next big thing' dreamt up by crypto start-ups, renews a promise that is probably as old as digital gaming (at least as old as the late nineties, when esports took hold in South Korea): that digital technology would enable us to earn money playfully and, in doing so, liberate us from the burdens of modern work.[4]

CLICK-WORK, CRISES, AND COLONIALISM

This language is veiling (quite thinly) the actual structure of play2earn which closely follows the true-and-tested capitalist-worker dichotomy: Typically, investors pay the high starting price for players who then have to play the game and get a cut of the profits. These investors are primarily

popularized the term 'avatar' in the context of virtual words and whose books allegedly were mandatory reading in Microsoft's Xbox development team.

3 Non-fungible Tokens; Explaining NFTs invariably runs the danger of making them sound more complicated and technically sophisticated than they are while also making them sound more harmless and beneficial than they are. To give a brief summary that avoids these pitfalls: A NFT is a digital receipt that can store any piece of code on it. In most cases it will store an html link to an image on a website. Every NFT also contains a unique identifying number whose identification and uniqueness is verified via blockchain technology. Blockchain is a way of verifying data that avoids trusting a central authority by both forcing users to trust smaller authorities and wasting a lot of energy for computer calculation on cryptographic ("Crypto") operations.

4 The last renewal of this promise came in the form of let's playing and live streaming. Of course, both esports and streaming produce workday-like structures once carried out with the intent to make a living.

middle-class people from the industrial nations, the so-called players are click-workers in low-income countries. Hope for an improved economic situation connects these two, as well as the publishers of the game who actually own the game and the servers it runs on. The publishers are hoping for dotcom-bubble-style mega careers, to progress from being 'merely wealthy' to the kind of superrich stardom people like Bill Gates, Jeff Bezos or Elon Musk embody. These are the only ones making 'real money', even if for most, their high-flying dreams inevitably crash as their currencies - and the crypto market as a whole - fall off the precipice. We don't have any doubt that when the dust settles on the crypto crash the wealthy involved will still be merely wealthy, the middle class will still be middle class and the colonized will still be subjected to colonialism.

Pay2earn's attractiveness is deeply rooted in the precarious material situation brought about by an ongoing polycrisis that has seeped into every part of everyone's collective lives: as economic and ecologic turmoils expose the paradigm of economic growth as untenable and render the promises of the American dream void, younger generations increasingly seem to be grasping at straws in the hopes of attaining or sustaining the level of material prosperity their parent generation enjoyed. This fear of social decline not only renders these middle-class 'investors' susceptible to technophoric imaginaries, but also vulnerable to the various con schemes attached to them. Accordingly, the cryptosphere is ripe with scams and exploits enacted on all levels of the ecosystem: from developers manipulating their own currencies and eloping with funds, to hackers stealing from wallets up to parasitic billionaires initiating pump-and-dump schemes via twitter. In promising a way to 'push through' the material limits of growth via a convenient technological fix, crypto and pay2earn closely follow in the footsteps of the dot-com bubble, which likewise set out to generate stellar profits by conquering the promised land of digital immateriality in the early 2000s. We all know how that one turned out for retail investors and workers. The dot-com bubble nevertheless generated some lasting technological and social innovations (for

better or worse), which supported the rise of a few tech billionaire fortunes, something that crypto will only achieve on a much smaller level if at all.

That the act of playing, and by extension earning, appears to happen within the digital realms of online games cannot mask the considerable material basis of the play2earn model: the global middle class invests its savings, colonial subjects offer labor, and the underlying crypto technology runs on wasteful amounts of hardware and energy, which is often generated by burning coal.[5]

The ensuing situation is best described as a layering of various forms of alienation and exploitation: a kind of *clickwork colonialism*, in which any superficial playfulness reveals rather than masks the economic relationships between the participants. It seems that when you combine work and play, rather than being liberated from work, any residual playfulness the game might have provided is lost and you end up with another drab and menial job – you lose the game in the strongest sense of the expression.

PLAY2EARN: A POLITICAL STATEMENT

Nevertheless, play2earn "games" use the concepts of "game" and "play" while heavily leaning into the aesthetics of cheap and low-effort free-to-play-games commonly found on the app store or on Facebook. By borrowing these aesthetics and following the naming pattern established by "free-to-play", "play-to-earn" betrays its intent to continue down a road that has been well-trodden in digital games already: The search for ever-new models of monetization in an attempt to get players to pay as much money as possible while providing as little ludic content as possible in return – only this time with NFTs underpinning and interweaving both in- and out-of-game economies.

5 An estimation of Bitcoin's carbon footprint, global energy consumption and production of electronic waste can be found here: //digiconomist.net/bitcoin-energy-consumption.

While these continuities certainly do exist, we feel that there is a qualitative difference that prevents us from describing play2earn as just another stage in the development of monetization schemes: Within the context of f2p monetization models, digital games and parts of their player bases emerged as a 'woefully underexploited' target audience. This view is substantiated by the fact that the spending ceiling in f2p games keeps rising - the purported cost for maxing out a character in DIABLO IMMORTAL (Blizzard 2022) is half a million dollars – and is even made explicit by industry leaders like Unity's CEO, who recently called f2p developers who do not focus on optimizing monetization "fucking idiots"[6]. Consequently, f2p models have been mainly discussed from a design and ethics perspective with issues like gambling and addiction dominating the discourse. As we have shown, pay2earn – and blockchain gaming in general – goes way beyond designing dopamine-seeking reward loops and catching 'whales' to carry a game's economy. Here, developers tap into the fear of social decline and of wasting one's time with gaming in an age that valorizes self-improvement over 'unproductive' leisure. Accordingly, their products exhibit a much larger potential to interfere with player's (affect) ecology, as they promise social and economic advancement while deliberately exploiting the Ayn Randian disposition of self-styled libertarian 'gamers'. At the same time, they address capitalism's need for ever-new financial constructs with which to move money around the globe, launder it, and scam those vulnerable to the con schemes that inevitably develop in the vicinity of new financial technology.

When Bill Gates recently described cryptocurrencies as a model case for the "greater fool theory"[7], he did not reflect that foolishness is often born out of desperation – the desperation of people who are confronted with problems that cannot possibly be solved on an individual level, while having internalized that the only tool at their disposal is that which they have (or have not) individually earned: their money. With economic and

6 See https://kotaku.com/unity-john-riccitiello-monetization-mobile-ironsource-1849179898.

7 The theory posits that a "fool" who has bought an already overvalued asset might still profit from his purchase as long as he can sell it to an "even greater fool" willing to pay an even higher price.

ecologic crises bearing down on people, the promises of immaterial goods who only ever appreciate in value continue to mesmerize players and developers alike.[8] Companies like *Square Enix*[9] and industry veterans like Will Wright,[10] who doubled down on their engagement in the cryptosphere despite the recent downturn,[11] ensure that games will continue to be one of the stages on which the conflicts outlined above will be enacted. We feel that describing the industry's involvement in blockchain shenanigans like play2earn as 'merely another monetization scheme' would be deeply negligent. Rather, it has to be understood as a political statement in favor of colonialist working conditions and a libertarian marketization of everything – a statement that deserves any derision games scholars and journalists can muster.

CRYPTO-FASCISM?

Of course, this is not without historic precedent: The entanglement between digital currencies, colonialist attitudes and games-turned-work can be traced back to the practice of gold farming, which could rightfully be classified as click work *avant la lettre*. Likewise, right-wing ideology has been present in this mélange from the start. After all, it was Steve Bannon who famously realized the political potential of privileged but angry young men during his brief stint in the gold farming business. A line can be drawn from the Chinese gold farming sweatshops he helped to finance, to Breitbart News and, eventually, Trump's White House.[12] Now the line seems to curve back on itself, as the men he helped to radicalize are driving the development and proliferation of crypto technology. There have long been

8 See Facebooks renewed push for "virtual real estate" in the form of their metaverse.

9 See https://kotaku.com/nft-market-collapse-square-enix-ubisoft-sega-konami-sca-1848878945.

10 See https://kotaku.com/will-wright-simcity-the-sims-nft-blockchain-metaverse-1849684767.

11 Luckily, the hype surrounding NFTs seems to be fading, see https://www.bloomberg.com/news/articles/2022-09-28/nft-volumes-tumble-97-from-2022-highs-as-frenzy-fades-chart.

12 See Green, J. (2017): *Devil's bargain: Steve Bannon, Donald Trump, and the storming of the presidency*. Penguin.

suspicions of big players in the crypto sphere adhering to libertarian or even extreme right-wing ideals. The visual language employed in Yuga Labs' famous "Bored Ape Yacht Club" NFT collection seems to be heavily influenced by 4chan's racist and sexist meme culture. Should the accusations of actual right-wing extremism[13] leveled against the company's founders turn out to be true, it would add a very concrete layer of meaning to the term 'crypto-fascism'.

These issues seem to have been largely overlooked by many in the academic sphere – several articles encountered during our research exhibited a cautiously optimistic attitude towards crypto's alleged potentials (especially for the art world), others were even empathetically hopeful for its reformatory social potential. These texts continued to be published, even as online gaming communities, journalists and critics issued warnings against the dangers of NFTs in gaming and elsewhere. Academia at large failed to criticize – or even recognize – these developments in a clear and definite way. Thankfully, the task has been taken up by video essayists like YouTube filmmaker *Folding Ideas* and the more critically inclined writers at gaming-related blogs like *Kotaku*. Nevertheless, we feel that it is woefully negligent to leave the timely engagement with these topics to articles and YouTube videos precariously funded by Google ad money and crowdfunding platforms like Patreon. Any caution towards crypto afforded by academic texts can be seen as an achievement in this light, even if paired with optimism. Maybe by the time of the next fintech "innovation" it is safer to err on the side of critical engagement.

13 Evidence for right-wing symbolism in the "Bored Ape Yacht Club" NFT collection is gathered here: https://gordongoner.com/. To have mentioned the obvious pun, this would make them crypto²fascists. Surpassing suspicions, there has been an NFT-Project called "Meta Slave" where one could buy NFTs of photos of black people.