Preface and Acknowledgments

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Since the beginnings of human civilization, game culture and material culture have been closely linked. In the act of free play—*paidia*, according to Caillois[1]—children, as well as adults, transform simple objects into multifaceted toys in an almost magical way. Analog forms of rule-based play—*ludus*[2]—would hardly be conceivable without dice, cards, and game boards. Digital play is no less suffused with materiality: Games are not only mediated by technical interfaces, which we access via hardware and tangible peripherals. They are also subject to material hybridization, paratextual framing, and attempts of dematerialization and rematerialization. Of course, these contentious processes do not only affect digital games. For over three decades, they have marked the marginalization of industrial methods and modes in favor of digital ones, in production and consumption, in work and culture—via buzzwords and practices such as 'ubiquitous computing,' 'augmented reality,' and more recently, to an increasing extent, 'metaverse.'[3]

1 Caillois, Roger: *Man, Play and Games,* Urbana: University of Illinois Press 2001 (*1958), p. 13.

2 Ibid.

3 All three concepts originated in the pioneering days of digital networking, around 1990, which also saw the emergence of the World Wide Web. Mark Weiser coined the term 'ubiquitous computing' that today we associate with the 'Internet of Things' (IoT) already in 1988. Four years later, Thomas Caudell, for the first time, described the fusion of the real and the virtual as 'augmented reality.' In the same year, 1992, Neal Stephenson published his novel *Snow Crash*, in which he evoked a virtual reality variant of such a fusion as the 'metaverse.'—For 'ubiquitous computing' see Weiser, Mark: "The Computer for the 21st Century," in: *Scientific American*, September 1991,

The work on this anthology started with the organization of a Game Studies Summit on "Playful Materialities" that took place at the Cologne Game Lab of TH Köln in July 2021 as part of the *11th Clash of Realities—International Conference on the Art, Technology, and Theory of Digital Games*. This volume documents the lectures given at the online summit and includes additional topics and perspectives. The contributions cover four major areas: "Places" explores locations and settings revealing the historical and artistic interdependence of the real and the virtual, the material and the immaterial; "Exhibits" focuses on practices and procedures employed in the material representation of digital gaming; "Modifications" traces examples of material pre-configurations of immaterial gaming experiences, augmenting adaptations as well as constricting controls; "Pieces," finally, addresses the material means of analog, digital and hybrid gaming, from pawns to puppets to pieces of paper.

The first section, "Places," opens with Gundolf S. Freyermuth's "Vegas, Disney, and the Metaverse: On the Material Anticipation of Virtual Worlds and Virtual Play in the Second Half of the 20th Century."[4] The study investigates the dialectical interrelation of material and virtual realities, i.e., "the progressive replacement of analog hardware and material processes by digital software" since the 1950s and the "countertrend toward the rematerialization of digitized data and media works" since the 1980s.[5] Drawing on Walter Benjamin's theorem of the aesthetic-technical anticipation of new media in 19th-century Paris, Freyermuth understands "the immersive and participatory experiences provided by Las Vegas' entertainment architecture" and ride attractions as a series of material anticipations of later virtual achievements and affordances in "graphics, simulation, games, AR, VR, the World Wide Web, and the Metaverse."[6]

The investigation of the 'future place' Las Vegas is followed by a contribution focusing on the contemporary digital auditory augmentation of a 'past place,' the

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pp. 94-104; https://users.ece.utexas.edu/~ethomaz/courses/asr/papers/intro/21st-century.pdf. For 'augmented reality' see Caudell, Thomas, and David Mizell: "Augmented Reality: An Application of Heads-Up Display Technology to Manual Manufacturing Processes," in: *Proceedings of the Twenty-Fifth Hawaii International Conference on System Sciences*2 (1992), pp. 659-669, https://www.researchgate.net/publication/3510119_Augmented_reality_An_application_of_heads-up_display_technology_to_manual_manufacturing_processes. For 'metaverse' see Stephenson, Neal: *Snow Crash,* New York: Bantam Books 1992.

4 In this volume pp. 17-97.

5 p. 18.

6 p. 19.

19th-century dropforge Hendrichs, preserved as an industry monument, in Solingen, North-Rhine Westphalia. In "Augmenting Materialities: A Case Study of Maschinenklangwerk," the authors Isabel Grünberg, Raven Rusch, and David Wildemann describe "the distinct materiality and mediality of augmented reality and discern its characteristics." Their goal is "to set new precedents for augmented reality both as a technology and as an artistic medium; to reinvigorate and expand its scholarly discussion, and to inspire innovation in the creation of augmented reality artifacts."[7]

The first section, "Places," thus ends with the artistic-theoretical reflection of an interactive sound installation in an industrial museum. Correspondingly, the second section, "Exhibits," begins with the exemplary analysis of another sound installation—a virtual one, contrasting the digital and the analog. In "Let's Play the Exhibition! Radiohead's KID A MNESIA Exhibition, Virtual Museums, and Games," Isabelle Hamm explores virtual exhibitions and their differences from analog experiences, asking: "what are the possibilities of a virtual exhibition? And what distinguishes it from a 'classic' exhibition? What kind of art is especially suitable for virtual exhibitions?"[8] In trying to answer these questions, the author emphasizes the potential of the medial interconnections between the fields of art and games.

The particular challenges of exhibiting games are addressed in the next contribution, "To Craft a Game Arts Curators Kit: A Collective Record of How to Publicly Exhibit Video Games Around the Globe."[9] Rene G. Cepeda and Chaz Evans document the genesis of this "collectively authored document that represents roughly a decade of practical experience producing game art exhibitions and public programs at museums and other cultural venues."[10] The paper sums up the main themes of the GACK and explains the role of a curation of digital games in museums and galleries "that treats video games with the respect and specificity they deserve."[11]

The second section concludes with a short history of video game exhibitions. Benjamin Beil's "On Chainsaws and Display Cases: Exhibiting Video Games" takes as its starting point a peripheral device released for RESIDENT EVIL 4 in 2005—"a small chainsaw covered in blood splatter."[12] Beil's historical-

7 In this volume pp. 99-119, here p. 99 f.

8 In this volume pp. 123-143, here p. 126.

9 In this volume pp. 145-157.

10 p. 145.

11 p. 155.

12 In this volume pp. 159-183.

theoretical investigation of the aesthetics and rhetorics of presenting games in museums and galleries pays particular attention to the widespread practice of both materially and functionally isolating digital artifacts like this exotic controller. The result is a surprising "praise of the display case": "By detaching an exhibition object from its everyday media environment—making it a semiophor—a form of historicity and especially a historical connection of hardware and software becomes visible."[13]

The engagement with the materiality of the chainsaw controller leads into the third section, "Modifications," which debates material arrangements preconfiguring the use and the perception of the virtual. The first contribution tackles the central issue of accessibility, the urgently needed adaptation of digital hardware to individual physical needs. In "Unpacking the Blackbox of 'Normal Gaming': A Sociomaterial Approach to Video Game Controllers and 'Disability,'" Markus Spöhrer examines the Microsoft Adaptive Controller as an experimental system for alternative bodily and technosensory configurations of digital gaming.[14] Deconstructing "the black box of 'normal gaming' with game controllers," Spöhrer introduces—via a case study—an "alternative approach of 'en-/disabling' gaming practices."[15]

The analysis of the material conditions of gameplay—the demands that the diverse bodies of the players place on interfaces—is complemented in the following article with a discourse on the use of material qualities and constraints in designing digital games. In "Being a Child Again Through Gameplay: Playable Child Perspectives and the Sitting Simulator BACKSEAT," Cordula Heithausen describes her desire to create a realistic and relatable child perspective that invites identification. [16] In analyzing the few games that have already undertaken such efforts, the author identified three basic approaches—Dark, Playful, Blended—as well as four essential elements: "a childlike position, a childlike comprehension/ perception, a projection surface, and optionally the sensations of nostalgia and/or retro."[17] Consequently, in creating her own game, she strongly emphasized the child's physical position in the virtual game space as well as "playful material(ities) that invite the player to interact and convey a narrative perspective in return."[18]

13 p. 177.

14 In this volume pp. 187-222.

15 p. 190.

16 In this volume pp. 223-252.

17 p. 249.

18 p. 250.

The third section concludes with a presentation of a game literacy workshop, which essentially unfolds its effects in interactive transitions between material and virtual play. Drawing on various approaches to understanding and teaching literacy, Hanns Christian Schmidt's "Lego Level Up: Game Literacy and Playful Materialities"[19] outlines the practical and iterative development of procedures, software, and apparatuses—in particular, the editor game software A MAZE IN TILES and the augmented reality arcade cabinet DARIO'S BOX. With their help, children can acquire game literacy by becoming "'brickcoleurs' of their own computer game worlds by incorporating a playful materiality—literally brick by brick."[20]

These bricks lead on to the fourth and final section, "Pieces," which opens with a discussion of the quintessential 'piece' of analog games—board game figures. In a multifaceted approach, Peter Podrez's "Beyond Pawns and Meeples: Material Meanings of Analog Game Figures" explores the different forms, functions, and meanings of the materiality of analog game figures combining perspectives from analog and digital game research with approaches from actor-network theories and affordance theories. [21] Podrez advocates for game figures as a point of convergence of analog and digital gaming—as such, they are "highly interesting research objects of holistic game research: They offer the opportunity to rethink a media theory of play(ing) and to observe different figural forms, functions, and meanings in an analytical way."[22]

This point of convergence of playful analog material and the digital is continued in Michael Conrad's exploration of the diachronous history of paper and the digital computer. "Have We Left the Paperverse Yet? Maps, Boxes, and other Paper Objects as Imaginative Devices of Unfulfilled Desires in Early Gaming" takes readers on a journey through the history of early digital gaming and points out the numerous instances where paper has been the co-creative material partner. [23] The journey spans from the origins of paper in the Middle Ages to Alan Turing's universal machine to its application as a paratextual framework and material supplement for early digital games. Conrad concludes that "the medial identity of early games should be considered as open and fluid, material-immaterial hybrids."[24]

While Conrad leaves open the question of whether paper is disappearing from digital games and game design, Micael Sousa assures that another, far older,

19 In this volume pp. 253-276.

20 p. 256.

21 In this volume pp. 279-314.

22 p. 310.

23 In this volume pp. 315-349.

24 p. 322.

material game piece—the die—is alive and well. "Keep the Innovation Rolling: A Modern Board Game Review of Dice Usages and their Mechanisms" systematically lays out the material and aesthetic affordances of this ancient material as he proposes a new taxonomy of dice usages in modern board games. [25] By analyzing the online database of "Board Game Geek," he identifies different types of dice and what game mechanics these support while also classifying and identifying current innovations and trends in dice games. Sousa finds that the creative meld of semiotic meaning, mechanical significance, and aesthetic experience is the driver for innovation in modern dice games and that "successful applications of dice are the result of mixing their material dimensions with mechanisms that build engaging game experiences."[26]

The section "Pieces," and with it, this anthology, concludes with something that has been foreshadowed throughout—the complete dematerialization of the playful material in the digital game. With "Immateriality and Immortality: Digital Toys in Video Games," Emma Reay takes the puzzle-platform game UNRAVEL as a case study to explore how the "haptic-panoptic" quality of digital toys can locate players in the liminal space between material reality and immaterial imaginings.[27] Drawing across Zoe Jaques' theorization of the 'spectrality' of stuffed animals and Katriina Heljakka's examination of toys as avatars, Reay argues that toylike protagonists in video games are intuitive vehicles to shuttle players between the realms of the physical and the digital. This volume began with the physical materialization of digital desires in the playscapes of Las Vegas and concludes with its inversion: the dematerialization of players as digital "ghosts"[28] inhabiting virtual materialities and leaving behind "play-echoes."[29]

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25 In this volume pp. 351-378.

26 p. 373.

27 In this volume pp. 379-398.

28 p. 379.

29 p. 380.

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