The Renewed Artistic Interest in VR

An Introduction to Research on Virtual Art

Manischa Partowi, Annette Urban, Manuel van der Veen

Virtual reality (VR) is booming in art, and at the same time it is still seeking its place. This twofold insight, which has thoroughly shaped our art historical research,[1] becomes evident with a closer look at the adjacent fields of art production and reception, art mediation and criticism, as well as academic discourse. On the one hand, dedicated art prizes, residencies, and related monographs have featured VR[2] as a promising new genre of digital art that deserves active support. Some exhibitions and conferences have initiated debates addressing the consequences that VR, as an emerging medium for artists, could have on contemporary art in general and on the role of museums today.[3] On the other hand, major resistance and obstacles to the medium's acceptance still exist among curators, art enthusiasts, and the discipline of art history. This resistance is caused by obvious access barriers, technical complexities and imperfections. It also stems from a mismatch with well-established aesthetic

1 The authors of this introduction are collaborating on the subproject C03 *Virtual Art: World, Object, and Body References in Contemporary VR Experiences* as part of the CRC 1567 *Virtual Lifeworlds at Ruhr University Bochum* (2022-) and have organized the international workshop *Virtual Reality. Interfacing Art, Games and Everyday Life* (23.-24.01.2025). Its proceedings are published in this volume.

2 Tina Sauerländer (2023): Unleashed Utopias. Artistic Speculations about Today and Tomorrow in the Metaverse, Ex. Cat., VR Art Prize Berlin, online: https://vrkunst.dkb-stiftung.de/export/sites/vrkunst/en/documents/UU_katalog_EN_final.pdf (last access: 15.09.2025); Paul Luckraft/Neilson Elizabeth (eds.) (2021): Artists in Virtual Reality, London: Zabludowicz Collection.

3 See for example Lívia Nolasco-Rózsás/Marianne Schädler (eds.) (2023): Beyond Matter, Within Space. Curatorial and Art Mediation Techniques on the Verge of Virtual Reality, Berlin: Hatje Cantz Verlag; 37. Deutscher Kongress für Kunstgeschichte, 2024, Section: »Bildräumlichkeit/Raumbildlichkeit – Paradigmatische Wechselbeziehungen und Übergänge ausgehend von VR« chaired by Annette Urban and Stephan Günzel.

premises, including the fundamental category of the artwork which is traditionally understood to require a certain distance in order to be properly encountered.[4] In addition, social unease and unfulfilled expectations[5] are often prevalent, caused not least by the cyclical resurgence of VR promises and their failures.[6] Nevertheless, the broader art public can nowadays hardly avoid coming into contact with VR-based artworks, which are no longer limited to specialized exhibition venues or festivals. Rather, visitors to contemporary art exhibitions are becoming increasingly accustomed to wearing a head-mounted display (HMD) to access artistic VR experiences, even if this mode of experience breaks sharply with the conventions of museum spaces and visitors are known to change their habits only slowly.

This progressive but not frictionless emergence of VR in art museums points to a changing terrain, which can be described as a fundamental normalization of virtual technologies. As these technologies are now embedded in almost every sector of society, they can be understood as a kind of Verlebensweltlichung [becoming lifeworld],[7] as the Bochum Collaborative Research Centre (CRC) *Virtual Lifeworlds* proposes. In this respect, the conditions for artists working with VR today have significantly changed in comparison to the first wave of VR art in the 1990s.[8] Some of the early canonical VR artworks such as *Home of the Brain* (1992) by Monika Fleischmann and Wolfgang Strauss had already entered prominent art institutions such as Mies van der Rohe's Neue Nationalgalerie in Berlin. But most of these works were presented in highly specialized contexts, often in sites of their production, such as newly established media art academies, centers, and accompanying festivals. As the title of Fleischmann and Strauss's work suggests, these early works tended

4 This reservation continues to apply to immersive art in general, and even more to the image spaces in VR, which envelop viewers as environments centred on the viewer. Cf. among others Julia Reich (2023): »What to Do in and with Images? Forms of Hands-On Activity in Augmented and Virtual Reality«, in: Maria Bremer/Markus Heinzelmann (eds), Diving into Art, Ex. Cat., Wien: Verlag für Moderne Kunst, pp. 81–89.

5 See for example the contributions by Manischa Partowi and Federica Cavaletti/Pietro Conte/Andrea Pinotti in this volume.

6 See Marcus Carter/Ben Egliston (2024): Fantasies of Virtual Reality. Untangling Fiction, Fact, and Threat, Cambridge, MA/London: MIT Press.

7 Stefan Rieger/Armin Schäfer/Anna Tuschling (2021): Virtuelle Lebenswelten. Körper, Räume, Affekte, Berlin/Boston: De Gruyter.

8 Cf. Oliver Grau (2004 [2001]): Virtual Art. From Illusion to Immersion, Cambridge, MA: MIT Press.

to present spectacularly otherworldly realms, which originated from a strong emphasis on the liberation from bodily limitations[9] and on the sovereignty of the mind.[10] Such references increased during the 1990s, culminating in the creation of entire alternative or parallel worlds, including escapist virtual realities, which attracted interest in both art and theory.

Today, digital worlds no longer exist separately but have become embedded in everyday life. Subsequently, the deepened integration of VR into contemporary art today is not primarily of interest to us in terms of its consolidation as a museum art form. Rather, we regard VR experiences that are exhibited in art contexts as another symptom of their arrival in society. In this context, the integration of VR technology is specifically linked to the possibility of questioning the normalization and taken-for-grantedness of the technology.[11] From this point of view, the artistic appropriations of VR serve both functions: they explore the technology's potential as an artistic medium (compared to, and even intertwined with, painting, sculpture, performance, and installation art), while also addressing the hidden agendas of its socio-economic uses and the techno-imaginaries associated with virtuality. Thus, a coherent discussion of VR in art requires an understanding of various frameworks and temporalities. Even though the technology has changed significantly in recent years, some of the promises and fears that emerged in the 1990s still play a role in how VR is perceived today.

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9 The vision of a disembodied space is expressed primarily in activist and artistic manifestos, including not only John Perry Barlow's *Declaration of the Independence of Cyberspace* (1996) but also, for example, the Ars Electronica exhibition catalogue entitled *Digital Dreams. Virtual Worlds* (cf. Georg Hattinger/Peter Weibel (eds.) (1990): Ars Electronica 1990. Digitale Träume – Virtuelle Welten, Linz: Veritas). However, the works speak their own language, and the theoretical conceptualization of mixed realities was emerging at the same time (see Paul Milgram/Fumio Kishino (1994): Taxonomy of Mixed Reality Displays, in: IEICE Transactions on Information and Systems E77-D/12, p. 1321–1329), even though the model of a linear scale from real to virtual still underlies this framework.

10 See Jens Schröter (2004): Das Netz und die Virtuelle Realität. Zur Selbstprogrammierung der Gesellschaft durch die universelle Maschine, Bielefeld: transcript, p. 216ff. Of course, there were also early experiments which, in contrast, addressed the body directly by providing rudimentary hand avatars (*Home of the Brain)*, or corporeal interfaces such as the famous diving suit for navigating through the virtual space by regulating the breath in Char Davies' *Osmose* (1995). Some multimodal works shifted the focus from the visible to the audible as in Akitsugu Maebayashi's *Audible Distance* (1997).

11 Cf. Hans Blumenberg (2010): Theorie der Lebenswelt, Berlin: Suhrkamp.

With our primary focus on the increasing use of VR headsets within contemporary art, we must also take the multi-faceted driving forces behind the renewed interest in VR technology into consideration. After the highly productive 1990s, the second boom around 2015 followed the »resurgence of VR,« which Marcus Carter and Ben Egliston date to around 2010. Similarly to the developments taking place in the 1990s, this moment is also characterized by VR's close enmeshment with the gaming and entertainment industries, that already drove the separation from the initially dominant military context before.[12]

What is new since the beginning of the 2010s is the fusion of VR with the realm of social media, exemplified by Facebook (now Meta)'s acquisition of Oculus in 2014.[13] This development forms the basis for subsequent ideas relating to interoperable metaverses.[14] Users are intended to experience these metaverses as immersively as possible with the help of VR technology. This turns the virtual into their working, living, and leisure spaces, which are ideally interconnected in a seamless way. The progressive takeover of key areas of everyday life is in turn facilitated by gamification, which persists as one of the core principles of the metaverse.[15] In the context of making virtual worlds increasingly inhabitable, another important driver behind the new artistic turn to VR since the mid-2010s comes to the fore: the technical innovations in headsets and enhanced tracking capacities. Features such as the Guardian or the passthrough mode ensure the integration of a virtual (gaming) area as a field of action in the middle of our surroundings, e.g., our living room, not only to avoid involuntary collisions between the virtual and the physical space but also to enable complementarity.

The entanglements between art, society, and technology outlined above, which define the field of artistic engagement with VR, have prompted us to conceive of VR as an interfacing phenomenon. Therefore, we want to focus on how VR brings the three contexts of art, games, and everyday life into relation.

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12 See J. Schröter: Das Netz und die Virtuelle Realität, p. 99ff. and 210ff.

13 M. Carter/B. Egliston: Fantasies of Virtual Reality, p. 10ff. and p. 51ff. See also Lisa Nakamura (2019): Feeling Good About Feeling Bad: virtuous virtual reality and the automation of racial empathy, in: Journal of Visual Culture 19/1, pp. 47–64.

14 Cf. Boris Magrini (2023): Kunst und das Metaverse heute – ein Wettbewerbsfeld, in: Pamela Scorzin (ed.), Mixed Realities. Neue Wirklichkeiten in der Kunst, Kunstforum International 290, pp. 67–75.

15 Cf. Benjamin Beil et al. (eds.) (2025): Gaming the Metaverse, Bielefeld: transcript.

1. VR exhibited

Given the renewed relevance of VR, both the technology and artistic engagement with it are currently balancing various factors: the emancipatory promises of the 1990s, gaming environments and the latest developments in the normalization of virtuality. However, in order to reflect on our existing lifeworlds, artists reinvest in building entire virtual worlds within the headset, which normally exclude the physical surroundings. What fascinates artists is not so much the increasing optimization that mainly drives game developers and facilitates usability for social media metaverses.[16] Instead, they are intrigued by the inherent possibilities of dissociating and reassembling the individual elements of the interconnections between body, technical apparatus, and world. Rather than focusing on the insularity of these virtual worlds, they increasingly aim at greater permeability between virtual worlds and exhibition spaces.

This is where a crucial consequence of exhibited VR comes into play: Since these VR worlds cannot be experienced from the outside, the empty exhibition space calls for a designed environment. This instantly undermines the idea of an enclosed space of imagination and the freed mind dear to much of the VR art of the 1990s. This situation creates the condition for strengthening the manifold transitions correlating the exhibition space with the VR experience. For example, as an extension of a fictional world or as an engine room revealing parts of the infrastructure which sustains the virtual world, to mention only two of multiple options. It is this situatedness within the exhibition space that is essential for our analysis of VR through art. We would therefore like to further elaborate on this approach to exhibited VR, which not only engages spectatorial, spatial, and institutional considerations but also opens up multiple methodological interrelations.

When viewed from an art-historical perspective, VR invokes bodily practices connected to the performing arts and performance based artistic work, for example. In this context, the technical innovations in headsets and enhanced tracking capacities discussed above come into focus. These technologies synchronize the virtual world not only with user's head movements and gaze, but also with whole-body and hand movements. They are designed

16 Contrary to their promises, these optimizations contribute to the confinement of the inner world and tend to compensate real-life encounters in form of hermetic escapism. Ibid, p. 33ff.

to increase freedom of movement, heighten multi-modal sensation, and strengthen the sense of being able to interact with the synthetic environment and surrounding objects. Artists and curators are well equipped to answer to the call to embed VR-experiences in the exhibition space, given the rich legacy of installation art and site-specific practices of institutional critique. Rarely does the exhibition space remain empty, with only a headset suspended from the ceiling, as was the case in the exhibition *Unreal* 2017 at the NRW Forum Düsseldorf.[17] We therefore propose to reconsider artistic practices, especially those involving installation, site specificity and bodily performance, in the context of VR research.

But art-historical references alone fall short when one enters interactive and exploratory virtual worlds shaped by the affordances of game engines. For museum visitors and researchers alike, familiarity with controllers and some knowledge of the gaming sector are necessary. Dynamic image spaces, level structures, first- and sometimes third-person perspectives, lore, game-like interactions, and exploration modes must be experienced, discussed, and analyzed. These do not always provide a consistent form or linear sequence and vary greatly depending on user behavior.[18] Additionally, it is crucial that these artistic virtual worlds not only relate to art-historical tropes and gaming logics but also increasingly incorporate references to everyday life. This requires reflection on how art relates to socially normalized and therefore often unquestioned technologies, as well as to possible alternative uses of these technologies.

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17 See the exhibition *Unreal*, NRW Forum, 25.05.-30.07.2017 which featured a virtual extension of the museum building instead, and the recent project: wwwforum conceived as virtual dependance of the NRW Forum. Cf. Alina Fuchte/Isabelle Hamm (2025): »Virtual Wonderlands, Insights from NRW-Forum Düsseldorf's WWWFORUM Project: An Interview«, in Benjamin Beil et al. (eds.): Gaming the Metaverse, Bielefeld: transcript, pp. 247–264.

18 For the controller as an essential object for VR art see Manuel van der Veen (2025): »Virtuelle Objekte. Eigensinnige Controller in der künstlerischen Praxis von LuYang und Mohsen Hazrati«, in: Patrizia Breil/Alisa Kronberger (eds.), Eigensinnige Objekte. Virtuelle Möglichkeitsräume zwischen Aufforderung und Entzug, Bielefeld: transcript, pp. 25–50. See for some methodological consequences resulting from this Manischa Partowi/Annette Urban/Manuel van der Veen (2025): »Screenshot«, in: Patrizia Breil/Florian Sprenger (eds.), Virtuelle Universität – Geistes- und gesellschaftswissenschaftliche Zugänge, Bielefeld: transcript, pp. 383–392.

fig. 1: Anna-Carolin Weber in cooperation with Tobias Kopka: I Spy With My Little Eye – Duette für einen Kopf und zwei Hände, 2022 (above: VR-view, below: photography of the performance)

The three areas of art, games, and everyday life overlap in various respects when it comes to VR. What sounds like a complex process can be achieved with simple methods and even without technical intervention: Ann-Carolin Weber engages with this triad in her performance *I SPY WITH MY LITTLE EYE – Duets*

for One Head and Two Hands (2022)[19], in which she passes a headset to one person and the controllers to another. While the person wearing the headset perceives the movements activated by the controllers only as loops of color in a dark, otherwise empty virtual space, the person drawing the movement patterns with the controllers is able to observe how the headset wearer reacts with their body to the translations. In this way, the external space is just as relevant as the virtual space; the virtual body is distributed between two agents, and physical movement is translated into a drawing that can be read as a playful dance or social communication. The work could be understood as an experimental intertwining of performance elements with a type of interaction known from games, as well as with possibilities of being in multiple locations at once and drawing on mixed forms of embodiment.[20] This structure also informs our virtual lifeworlds. It is a form of synchronization between various virtual, digital, and physical worlds, achieved through the user's self-reflexive body.[21]

The act of confronting one VR user with a dark, abstract space and equipping the other with controllers allows them to sense each other: once by reproducing the tracked movement and once because without glasses, the surroundings can be perceived directly. This addresses both hermeticism and possible permeability of VR. In Weber's work, the distance between virtual reality and external space is bridged by hacking the device and by instructing the users to shift their perception from purely vision to also imagining and feeling. This may be understood as a distinction between older and newer VR. With the help of DIY techniques, Ann-Carolin Weber indicates a direction that current developments in the high-tech industry are taking. The distance between VR and external space is now minimized through the use of passthrough mode, integrated into the headsets. This feature, known from AR glasses and formerly a safety feature in VR goggles, has only recently become more common in every-

19 *I Spy with My Little Eye* (2022), in: vrdanceclub.de. Online: https://vrdanceclub.de/about-i-spy/ (last access: 17.10.2025).

20 This is connected to a focus on corporeality, which has long been a fundamental aspect of the theorization of the deeply embodied virtual reality, as described by Mark B. N. Hansen in his 2006 findings. See Mark B. N. Hansen (2006): Bodies in Code. Interfaces in Digital Media, London: Routledge, p. 107ff.

21 Julia Reich/Manuel van der Veen (2023): »›a kind of mixed, intermediate experience‹. On the Entanglement of Image and Bodies«, in: Yearbook of Moving Image Studies (Mixed Reality Images), Marburg: Büchner, pp. 92–114.

day life and as an artistic tool; it is therefore of particular importance to us.[22] Passthrough allows the scenery internal to a virtual world to be shown simultaneously with the immediate physical environment. As such, it reclaims a degree of embeddedness of the virtual space within the physical that, until now, only handheld devices have been able to offer.

1.1 Virtual Worldmaking in-between

The technological shift from all-encompassing VR to passthrough VR is a crucial symptom of the transience of technology. In relation to this development, it is the contiguous impact and potential that VR has on art that interests us in particular. Just as virtuality and the lifeworld can no longer be separated from one another, the idea of a hermetic VR is becoming increasingly questionable. In short, it could be said that the wide variety of technical experiments and innovation within VR over the last ten years has led to a complex differentiation of VR's artistic potential that awaits further investigations. Commonly used terms such as »Xtended Reality«, especially the new technical modes referred to as »EMiXAR«,[23] require more precise definitions in order to determine the terms' relation to encapsulating VR. Unsurprisingly, the recent buzzwords referring to mixed realities have affected the previously strictly virtual worlds.[24] As discussed above, these virtual worlds are nowadays casually addressed as interoperative metaverses,[25] where worldbuilding is often considered a trans-

22 Cf. Julia Reich/Annette Urban/Manuel van der Veen (2023): »passthrough. Von Portalen, Durchblicken und Übergängen zwischen den (virtuellen) Welten«, in: Pamela C. Scorzin (ed.), Mixed Realities. Neue Wirklichkeiten in der Kunst, Kunstforum International 290, pp. 86–95.

23 Meaning something like Extended Mixed Xpanded Augmented Reality. See online: https://www.emixar.com/ (last access: 15.10.2025). The X maybe also refers to Crossing, see Paulien Dresscher/Nanna Verhoeff: »XR. Crossing and Interfering Artistic Media Spaces«, in: Larissa Hjorth/Adriana de Souza e Silva/Klare Lanson (eds.), The Routledge Companion to Mobile Media Art, New York: Routledge 2020, pp. 482–92.

24 Cf. P. Scorzin: Mixed Realities.

25 See the exhibition *Collective Worldbuilding. Art in the Metaverse*, 03.06.-13.08.2023, Haus der Elektronischen Künste Basel; Sabine Himmelsbach/Boris Magrini (eds.) (2023): Algorithmic Imaginary. Art on the Blockchain and in the Metaverse, Ex. Cat., Basel: Christoph Merian Verlag; B. Magrini: Kunst und das Metaverse heute; T. Sauerländer: Unleashed Utopias.

medial practice.[26] In this context, the lifeworld significance of virtual worlds is mainly argued on the basis of the participatory involvement of gamer communities and of fans following the connecting points of transgressive storyworlds.[27] Alternatively, it is tied to virtual environments and »free social gaming platforms« that function as »stages for performing online identities.«[28]

In the search for a terminology that captures the currently prevailing mixed conditions more precisely, neologisms such as the »phygital« have emerged.[29] This term was foreshadowed by the »analogital,« which can be traced to Marshall McLuhan,[30] and to a perspective foregrounding the fundamental hybridity of electronic media and transitions from »old« to so-called »new« media in general. Nevertheless, this fundamental mixedness should not lead us to dissolve into a vague de-differentiation. The hermeticism in VR, the phenomenon of an encapsulated world within an image space, still seems to attract artists. At the same time, many VR experiences today – like the one developed by Ann-Carolin Weber – exclude their direct surroundings, but only at first glance. By connecting these divergent tendencies, we could propose that VR's potential is, first, to create some sort of enclosure or shelter, not solely reserved for the dystopian, corporatized spaces of the metaverse, but for the freedom to imagine alternative, even auto(-reproductive) worlds; and, second, to design the transitions between these worlds and the exhibition space.

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26 Julia Stoschek Foundation (ed.) (2024): Worldbuilding. Gaming and Art in the Digital Age, Ex. Cat., Berlin: Hatje Cantz Verlag.

27 Cf. among others Krzysztof M. Maj (2015): »Transmedial World-Building in Fictional Narratives«, in: IMAGE. Zeitschrift für interdisziplinäre Bildwissenschaft (Special Issue 22) 11/2, pp. 83–96, https://doi.org/10.25969/mediarep/16492. And Patrick Rupert-Kruse (2017): »Transmedia Storytelling oder Erzählen in Medienökosystemen«, in: Jahrbuch immersiver Medien 9, Marburg: Schüren, pp. 6–9, https://doi.org/10.25969/mediarep/18132, who refer back to Henry Jenkins (2006): Convergence Culture. Where Old and New Media Collide, New York & London: New York University Press.

28 Andrea Shinyoung Kim: Virtual Worldmaking. A Phantasmal Media Approach to VRChat, p. 10 and p.12, online: https://cms.mit.edu/wp/wp-content/uploads/2022/03/553835918-Andrea-Kim-Virtual-Worldmaking-A-Phantasmal-Media-Approach-to-VRChat.pdf (last access: 14.10.2025)

29 Pamela Scorzin (2023): »The ›Phygital‹ as the Virtual Real: The Role of Mixed Realities in Contemporary Art«, in: Yearbook of Moving Image Studies (Mixed Reality Images), pp. 115–135.

30 Cf. Verena Kuni (2015): »F (ANALOGITAL)«, in: Daniel Kulle et al. (eds.), Post-digital Culture, online: http://www.post-digital-culture.org/kuni/ (last access: 15.09.25).

While the division of VR devices among users, as in Weber's example, is more of an exceptional case, the convergence of virtual worlds with the physical exhibition space has become a common strategy in the arts. An example is the VR experience *[Posthuman Wombs]* (2022) by Anan Fries. On the one hand, Fries' work requires a form of encapsulation in order to convey the imaginary of a community in which non-binary people can take on and share the task of bearing children. This encapsulation is reinforced by the spatial impression of a world that likewise envelops users like a pastel-colored womb (fig. 2).

fig. 2: Anan Fries: [Posthuman Wombs], 2022, installation view: Unleashed Utopias. Künstlerische Spekulationen über Gegenwart und Zukunft im Metaverse, group exhibition of VR-Art Prize, Haus am Lützowplatz, 09.09.-04.11.2023

On the other hand, this encapsulation already contains moments of transition. In general, such transitions can be brought about by a wide variety of means and methods, including assembling virtual utopias from scanned fragments of our daily surroundings, thus questioning the relationship between life and alternative worlds. Equally relevant are references to site-specific installation practices that build bridges to the virtual environments or involve experimentations with different modes of experience, thereby creating inter-

sections between exhibition and game spaces. Most of these ways of cross-referencing inner-worldly and physically existing environments, bodies, and objects can be found in Anan Fries' VR experience as well. This begins with life-like body-scans of the artist and their companions, turned into inhabitants of this posthuman future scenario. It continues with the synthetic uterus applied to their body and finally scaled up to a giant IT-bag that cradles the offspring as a literal body accessory. This bag is a transferable shelter that makes care work shareable and a commodity fetish at the same time. Visitors can interact with a digital version of the bag using an AR tablet, and this interaction is integrated into a larger installation setting that includes a ball chair for the VR user.

fig. 3: Anan Fries: [Posthuman Wombs], 2022, Screenshot

These multimedial transitions between in-game phenomena, exhibition space, and lifeworlds – both within VR and in physical space – significantly inform the VR experience right from the beginning. As soon as the headset is on, we find ourselves in a cave-like environment where a set of screens plays a tutorial on how to wear the device and operate the controllers. The tutorial gently guides us into the virtual world. The built-in how-to sequence signals that care is being taken for the users, especially for those who are

unfamiliar with VR devices.[31] The prelude invites visitors to freely explore the environment (surrounded by smiling pregnant people) and additionally includes explicit hints to different, more interactive sequences, where users can select various feeds scattered across huge mobile-phone screens for closer viewing. Thus, the artwork integrates parts of the social media iconosphere as another crucial element of our everyday life. The virtual experience also offers an inner-worldly diegesis that in many parts consists of a form of guided immersive storytelling reminiscent of VR films (Fries' work is itself described as a VR essay).

To summarize, the example by Anan Fries provides a few central indications of why it is often not sufficient to be concerned with VR as a narrative »hypermedium«[32] and as a remediation, for example, of cinema.[33] It is also necessary to better understand how the invitation to explore such virtual worlds naturally adapts specific affordances and modes of interaction design. First developed and tested in the context of gaming, these technologies now permeate our everyday actions and seamlessly intertwine with the habits of online communication and sociality.[34] Confirming the observation that VR in contemporary art figures between an encapsulation from and a transition to its worldly surroundings, we take this as a starting point for reexamining the relationships between everyday life, gaming culture, and art-historical traditions as well as exhibition practices, as they are mediated specifically through VR. Rather than looking at art as a derivative of VR, we propose to broaden the understanding of VR as an artistic medium.

31 Cf. Christian Bunnenberg et al. (2025): »Von Empathie zum Caring, VR als soziale Konstellation«, in: P. Breil/F. Sprenger (eds.), Virtuelle Universität, pp. 471–483 (forthcoming).

32 Patrick Rupert-Kruse (2024): »Panorama – Sphäre – Skulptur. Versuch einer Narratopologie virtueller Realitäten«, in: Lars C. Grabbe/Id./Norbert M. Schmitz (eds.), Neue Erzählformen in dynamischen Bildtechnologien. Formprobleme zwischen Populärkommunikation und autonomer Kunst, Marburg: Büchner, pp. 83–107.

33 Jay David Bolter/Richard Grusin (2000): Remediaton. Understanding New Media, Cambridge, MA: MIT Press.

34 See Ksenia Fedorova (2020): Tactics of Interfacing. Encoding Affect in Art and Technology, Cambridge, MA: MIT Press.

1.2 Installation Settings of VR art

In addition, the emphasis on exhibited VR as we understand it here shifts the focus away from the issues of easy accessibility, which are primarily enabled by desktop-based WebXR as a location-independent infrastructure. The questions of alternative, non-hierarchical forms of distributing and simultaneously producing digital art that deliberately bypass traditional art institutions have instead been at the center of net art discourses, and they still are with regard to online curating.[35] Web-XR experiences are generally not a frequently used format in art, due to the (still) low distribution of VR headsets in private households. Nevertheless, there are interesting experiments using cardboard devices, WebXR-based navigation via WASD keys, or the open-source kit for virtual rooms made available by Mozilla Hubs until recently.[36]

In contrast to the open gesture of inviting online audiences, artists working with HMD-based VR in museum spaces frequently invest in a single-user mode of reception, figuring the experience as an intimate situation. To this end, they use installation-based means such as Anan Fries' ball chair, a bed[37], a carpet[38], a bumper car[39], self-made machines[40], or a bathtub as placements

35 Annet Dekker (ed.) (2021): Curating Digital Art. From Presenting and Collecting Digital Art to Networked Co-Curation, Amsterdam: Valiz. Or Joasia Krysa (ed.) (2006): Curating Immateriality. The Work of the Curator in the Age of Networked Systems 3, New York: Autonomedia.

36 Cf. for the first option the exhibition *HOLE* by New Scenario that Annet Dekker is analyzing in her contribution to this volume, and for the last option the numerous exhibitions realized by the platform peer-to-space directed by Peggy Schoenegge and Tina Sauerländer: https://www.peertospace.eu/ (last access: 15.09.2025).

37 Cf. Manischa Partowi (formerly Eichwalder) (2024): »Embracing Otherness? A VR Body Hack by Morehshin Allahyari«, in: AN-ICON. Studies in Environmental Images 3/1, pp. 119–132, https://doi.org/10.54103/ai/23206.

38 See, for example, in the VR installation *Palo Alto* (2017) by Banz & Bowinkel. Cf. also Annette Urban (2023): »Escape. Weltbezug und Weltentzug in Kunst mit VR«, in: Lilian Haberer/Karina Nimmerfall (eds.), Mouvement/Movement. Festschrift für Ursula Frohne, Munich: edition Metzel, pp. 99–104.

39 See, for example, the VR installation *Hysteresis* by Dani Ploeger. See also Jens Schröters contribution to this volume.

40 Akwasi Bediako Afrane *TRONS 'R' US*. For the analysis of objects in VR art see Manuel van der Veen (2025): »Headset – Maske«, in: Zeitschrift für archäologische Aufklärung 4, Bielefeld: transcript as well as Id. (2025): »Objekte«, in: Manischa Partowi/Annette Urban/Id. (2025) (eds.): VR in der Gegenwartskunst. Ein Living Catalogue, online: www.vr-in-gegenwartskunst.de (last access: 15.08.2025).

for the VR user in order to underscore the technical shielding of the apparatus. Whereas the strong affective response triggered by this twofold envelopment underpins the much-criticized idea of VR as an »empathy machine,«[41] this aspect of the technology can also be seen to reveal its darker side in various artistic examples. This is particularly true when discomfort and latent distress arise from being transported – or rather, exposed – to a world and its hybrid creatures that loom oppressively and uncomfortably close to the user, as demonstrated by Morehshin Allahyari's VR installation *She Who Sees the Unknown: Kabous, the Right Witness, and the Left Witness* (2019).[42]

Against this background, limiting the scope to exhibited and HMD-based VR art turns out to be a fruitful approach for our art-historical research project. Our aim is to address the contemporary state of virtual art in times of virtual lifeworlds, a good 20 years after the first relevant art historical treatises on this topic.[43] Our approach of situating the VR artwork within the context of an exhibition not only elicits the encapsulating tendencies of VR, but also the multiple modes of transition that artists create to connect the virtual with the physical space, as outlined above. Furthermore, this perspective brings entirely new objects into view: In order to counter the curatorial challenge that VR art poses to individual, enclosed users and to support the gathering and co-presence of museum visitors, artists have introduced installation elements like a second screen.[44] In our analysis, the second screen has, in particular, turned out to be a central element that artists draw on not simply to provide the museum's audience with insights into what is happening inside the solitary VR experience, but to extend and complicate the work's spatial and conceptual logic. Many artists transform this necessary element, which first and foremost improves VR's suitability for exhibition in the museum space, into a multi-layered installation device. For example, the external second screen can be repeated inside the VR experience, functioning like a reverse window that inserts a live view of museum visitors into a virtual, extraterrestrial world, such as in *Mercury* (2016), a VR installation by the artist duo Banz & Bowinkel.[45] This second screen can

41 Cf. the contribution by F. Cavaletti/P. Conte/A. Pinotti to the volume where the extensive discourse on this topic is concisely summarized.

42 Cf. M. Eichwalder: Embracing Otherness? See also Manischa Partowi's discussion of Jordan Wolfson's *Little Room* (2025) within this volume.

43 Cf. O. Grau: Virtual Art.

44 See fig. 1 in the contribution by Manuel van der Veen to this volume. See also Id. (2025): »Second Screen«, in: M. Partowi/A. Urban/Id. (eds.), VR in der Gegenwartskunst.

45 Cf. also the contribution by Ursula Ströbele to this volume.

function as a mirror image that transforms the avatarless embodiment of the VR user into an empty shell.[46] Or it can, as in Patricia Detmering's VR installation *Aporia* (2021), separate the VR-internal world experience from the wall-filling projection of the second screen by introducing two different perspectives onto the same virtual landscape.[47] This strategy stimulates an exchange between the no longer completely isolated immersive participant and the bystanders as they compare their respective worldviews.

In order to systematize the transitions outlined so far, which demonstrate how exhibited VR is becoming permeable from within, this research project has benefited from looking at its references to the world, the body, and objects.[48] Under this condition – namely, a virtual reality that opens up from within and is situated in exhibition spaces – we would now like to take a closer look at the aforementioned interfacings between the fields of art, computer games, and everyday life. These interfacings do not coincide with the transitions between physical and virtual space, but rather require different modes of experience and approaches to interpretation, as well as references to a broader field of the virtual that goes beyond contemporary art.

2. Interfacing

Our previous discussion has shown that it is necessary to consider the shift towards now widely used technologies of virtuality in order to better understand the changing conditions that have led artists to return to VR. We propose a framework that moves beyond the interfaces that are decisive for access to virtual experiences and often specifically designed by artists as hybrid objects, in favor of rethinking VR as a phenomenon of interfacing in itself.

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46 Cf. the contribution by Manischa Partowi to this volume that analyzes VR installations by Theo Triantafyllidis and Jordan Wolfson.

47 Cf. Annette Urban (2026): »Insuläre Topografien und welthafte Ganzheit. Künstlerische Auseinandersetzung mit Landschaft in VR«, in: Anna Polze/Manuel van der Veen (eds.), Virtuelle Landschaften. Raumerkundungen an der Grenze des Screens, Bielefeld: transcript (forthcoming).

48 Within CRC-project C03 *Virtual Art*, the members of the research team are each working on their own subprojects: Manischa Partowi is focusing on aesthetic experience in VR art, Manuel van der Veen is looking at specific object constellations, and Annette Urban is examining the question of their references to the (life)world.

We thus convert a technical feature of VR – one that is based on transitions in terms of exhibition, production, and conceptual definition – into a methodological approach. We thereby propose transitions between perspectives from different disciplines as particularly effective for the analysis of VR art. Given this analogy, VR as a technique of mediation between very different areas does not necessarily have to be broken down into a multitude of functionally differentiated fields. Rather, the technology can be meaningfully systematized for us through the triad of everyday life, gaming culture, and art. As an anthology title, we have chosen *Virtual Reality Exhibited* not only to indicate our subject matter of VR in the exhibition space, but also because we wanted to signal our wish to ex-pose VR art to different perspectives and frames of analysis. Therefore, we have chosen to focus on the processes and relationality indicated by the verb form *interfacing*[49], and explore how VR also mediates between different arts, techniques, and forms of cooperation that are just as fundamental as the connection of different worlds, bodies, and objects. We understand the concept of interfacing as a framework to address environmental and situational embeddedness and world-building, embodiment, object-relatedness, and the orientation towards recipients. This perspective has proven to be productive as a point of focus for initiating an exchange between the various disciplinary experts on VR. Before we proceed to go into more detail about the workshop's findings, our framework built around interfacing can be illustrated with one final example from our body of work.

DiMoDA 4.0 Dis/Location (2022) is a paradigmatic example of VR as an interfacing technology. The project is a virtual exhibition that travels between physical gallery spaces as well as the individual's desktop. In the exhibition space, it can be experienced via an HMD, and on a personal computer, it can be downloaded from the developers' website and experienced in 2D. *The Digital Museum of Digital Art* is conceived as a »pioneering virtual institution, dedicated to commissioning, preserving, and exhibiting cutting-edge VR artworks.«[50] It was founded by the artists and developers Alfredo Salazar-Caro and William Robertson in 2013. Up until now, there have been four editions of *DiMoDA*, each consisting of a unique virtual environment with a museum-like architecture that hosts an exhibition of VR artworks. In *DiMoDA 4.0 Dis/*

49 See K. Fedorova (2020): Tactics of Interfacing, and Iris van der Tuin/Nanna Verhoeff (2022): Critical Concepts for Creative Humanities, Lanham: Rowman & Littlefield.

50 See the handout for the exhibition of *DiMoDA 4.0 Dis/Location* at Bannister Gallery, Rhode Island, 6.-28.10.2022.

Location, the developers collaborated with the architect Ayman Tawfeeq and the acclaimed curator for digital art Christiane Paul. Both the curatorial concept and the exhibition design are interwoven with the theme of *Dis/Location*. The artworks, such as Ricardo Miranda Zúñiga's *Desplazados* (2021), Tamiko Thiel's *Atmos Sphaerae* (2021) and Banz & Bowinkel's *Grid* (2021), negotiate the experience of dislocation from various perspectives, ranging from gentrification and migration contexts to human-machine miscommunication issues to an abstract and global perspective on human imaginaries and ecological atmospheres. Constituting separate virtual experiences within the main exhibition environment, each of these artworks proposes its own approach to VR as an artistic medium. As a close study of the artworks would exceed the scope of this introduction, we will instead look at the dis/locating dimensions of the virtual exhibition infrastructure to exemplify our understanding of VR as an interfacing technique.

Let us start with the exhibition in the sense of a physical gallery space. Here, the spatial installation of the VR technology creates an intersection between the physical and the virtual exhibition space, which allows for a transition of objects and experiences between these spheres.[51] Positioned in the middle of the physical exhibition space, the VR viewer is surrounded by an audience, who can follow the viewer's virtual experience and POV in real time via a monumental video projection on one of the exhibition walls. As such, the audience and the viewer share both exhibition spaces with each other. At the same time, each viewing experience is configured by the particularities of each of the spaces: Within the physical exhibition space, the audience follows the embodied VR experience as if watching a film. Their mode of experiencing is more decentralized than in VR, which is enhanced by the prominent display of the VR hardware. Like a sculpture, the gaming PC is mounted onto the wall, demonstrating computational power as a crucial structural difference between virtual and physical exhibition space. This display of the hardware highlights the general infrastructural condition of VR as a digitally simulated image space. Next to it, there is an object that migrated from within the virtual into the physical space. It is a 3D-printed object featuring shapes of human heads, abstracted into a polygon structure. Materialized, mounted onto a pillar, and illuminated with a spotlight, this object functions like a sculpture. It can be observed from various vantage points within the physical space, and it links back to the virtual

51 Cf. A. Urban: Über Portale, Sphären und andere eigensinnige Objekte, p. 131ff.

space. In VR, the structure's function is not that of an object, but that of a large building to be partially perceived from outside and explored from the inside.

fig. 4: DiMoDA 4.0: Dis/Location, 2022, installation view: Bannister Gallery, 2022

This flexible scalability, which ensures that the built lifeworld, an artifact, and human effigies collapse into one another, is worth further discussion within theories of architectural design, where VR is considered a particularly suitable medium, as it allows users to enter a rendered visualization of a designed space and engage with this image intentionally.[52] In the virtual space of *DiMoDA 4.0*, the building-like structure constitutes the architectural shell that houses various single VR artworks. Extracted from its virtual embeddedness, this shell structure can be understood as a document of the production process itself. As an interface between the virtual and the physical exhibition space, this installation setup offers a reflective approach to the virtual situation and allows for negotiating the different conditions of spatial, material, and experiential stability in VR and IRL.

In the VR mode of *DiMoDA 4.0*, however, the relation between physical and virtual space is disrupted. The viewer is displaced from the gallery space and relocated to an urban environment. With empty and partly demolished buildings, wrecked cars overgrown with vegetation, and an eerie, ghostly atmosphere, the scenery is reminiscent of a post-apocalyptic scenario from a videogame (such as *Fallout 4* or *The Last Of Us*). Further research could help clarify what forms of interfacing are at work in the realistic 3D replicas of buildings from New York neighborhoods that serve as the game's backdrop: How do they relate to photogrammetry-based methods of game production? Moreover, how does the work relate to sociological approaches to neighborhood research, considering that Zúñiga's artwork includes a field research perspective in the form of interviews with residents? The appearance of the houses and the distinctive yellow cabs also evoke the urban space of the megacity, thereby positioning the virtual exhibition scenario somewhere between gameworld and lifeworld.

Unlike in real life, the viewer is not using their body to explore a space but is instead required to know how to operate the controllers to move through it. When navigating the virtual space, the viewer must aim in one direction, pull the trigger on the controller, and release it to land at the desired location. This form of teleport-based, discontinuous movement resembles the aiming mechanism used in many video games, which reinforces the association with a

52 Cf. Philipp Reinfeld (2022): »Performatives Entwerfen in Virtual Reality: Körperaktive Hybridisierungen zwischen virtuellem und realem Raum«, in: Kassandra Nakas/Id. (eds.), Bildhafte Räume, begehbare Bilder, Leiden: Brill/Fink, pp. 27–51, here: p. 30, https://doi.org/10.30965/9783846767238_004.

gaming environment. Yet because there is no hidden quest or task prompting the viewer to take action in order to encounter the artworks, attention eventually shifts away from exploring the deserted surroundings and toward the specific location highlighted within the scene. There, a polygon-shaped object towers between empty houses and is marked with bright blue neon tubes. Like the direction signs that lead visitors from a gallery's lobby to the exhibition space, these signs are intended to be understood literally by the viewer in order to locate the actual artworks. In terms of the orientation of the viewer, the logic of the physical gallery infrastructure seeps into the virtual space and intersects with the mediated view of gameworlds, which is characterized by a »distinctive sensitivity for signs [and] for functional relations.«[53] Based on these observations, we find it promising to pose research questions from different perspectives: How do interaction principles from gaming intermix with spatial relations opened up through curation, especially since computer games always have something to do with space?[54] Furthermore, to what extent does the design of the exhibition world refer to a lore that evokes the social and political dynamics of dis/location?

In previous editions of *DiMoDA 1–3*, the virtual gallery space resembled traditional forms of museum architecture, ranging from classical prototypes to modern futurism. These architectural citations underscore the developers' aspiration to establish *DiMoDA* as the »finest holding for twenty-first century Digital Art in the World,«[55] able to measure up to the gold standards of traditional architecture for art. In *DiMoDA 4.0*, however, these references are absent. Instead, the theme of dis/location is translated into the design of the vir-

53 Marc Bonner (2018): »Gekerbte Wildnis – Inszenierungen vermeintlich unberührter Umwelt in digitalen Spielwelten«, in: Paidia. Zeitschrift für Computerspielforschung (28.02.2018), p. 8, online: https://paidia.de/die-gekerbte-wildnis-inszenierungen-vermeintlich-unberuehrter-umwelt-in-digitalen-spielwelten/ (last access: 15.09.2025).

54 »Even before game studies was a recognized research field, space has been a recurring, core topic of debate on the new cultural form of videogames. [D]ue to the dynamic nature of simulations, space was acknowledged as a constitutive factor of designing and playing games; their sine-qua-non.« See Espen Aarseth/Stephan Günzel/Erik Hoops (2019): »Introduction. Space – The Theoretical Frontier«, in: Id. (eds.), Ludotopia, Bielefeld: transcript, pp. 7–10, here: p. 7.

55 According to the statement of the developers on *DiMoDA 2.0: Morphé Presence*, 08.08.2016, online: https://transfergallery.com/wp-content/uploads/2016/11/DiMoDA-2.0-Press-Release-Updated.pdf (last access: 15.09.2025).

tual environment, which draws on the familiarity of a real-life setting while at the same time remaining significantly detached from ordinary experience. The virtual exhibition still takes place within a building – and not, for example, in the »public« space of the decaying cityscape. Yet the gallery's architecture is more closely integrated into a cyberspace vision of the virtual. Its metallic wire-mesh structure resembles scrap metal in the urban landscape and frames the neon-lit building as a futuristic recycling project, adding a steampunk atmosphere to the virtual environment.

fig. 5: DiMoDA 4.0: Dis/Location, in game screenshot

Upon entering the alien building, the viewer can ascend and descend on a helix-like ramp to reach the artworks. Each artwork consists of a virtual world in its own right, represented as a glowing sphere hovering at different levels of the building. No wall labels or information about the artworks or artists are attached to these spheres, which frames the encounter as a surprise in the style of typical game mechanics. To actually experience the artwork, gaming experience is an advantage as well: just as the neon light of the building signals that an action should be taken, the viewer needs to position themselves within the liquid-like sphere to activate the »action point« and start the artwork. Entering the sphere means entering the artwork – a logic that resembles moving into the next level in games. While entering requires bodily engagement with

the virtual representation of the artwork, leaving requires the use of the controller. By opening a menu, a »non-diegetic augmented reality marker«[56] overlays the virtual scene, presenting several items that explicitly provide navigational options. The viewer can leave the artwork by clicking »back to lobby,« which teleports them into the urban space of the virtual setting, or they can open a text containing background information on the individual artwork as well as the exhibition concept. Since conventions of orientation in traditional museum contexts overlap with those of video games, it is productive to conduct a comparative analysis of navigation in computer games and, for example, exhibition texts. This dis/location – or interface – between art and gameworld becomes particularly visible within the context of *DiMoDA's* installation in a physical gallery space.

As a download, the virtual exhibition enters the viewer's lifeworld. This personal mode of display dislocates the viewer from their habitual use of the computer and redirects them into the exploration of the peculiar exhibition space. Navigation within the 2D monitor version follows the digital conventions of moving through space with WASD, as in a desktop-based videogame. Far from »browsing the catalogue with a new interface,«[57] *DiMoDA* functions as a unique virtual exhibition format that merges art-institutional conventions with videogame mechanics. This virtual exhibition tends to emphasize an encapsulation from the lifeworld and the artworld by proposing a game-like counterworld. Nevertheless, its particular physical and conceptual embeddedness within these different reception contexts illuminates its sensitivity to the hybrid constitution of VR and the potential of interfacing various research perspectives.

To summarize the multiple interfacings between art, games, and everyday life occurring here: The virtual exhibition setting of *DiMoDA* addresses a crucial parameter of traditional reception contexts. By creating an immersive virtual setting as an encompassing environment for the artworks, it challenges the basic assumption that the physical exhibition space functions to create distance between viewer and artwork. Within the framework of gaming, this setting can be characterized as a form of worldbuilding, which projects a fictional scenario grounded in a dystopian perspective on our hybrid lifeworld. This game-

56 M. Bonner: Gekerbte Wildnis, p. 10.

57 Annet Dekker (2021): »Curating Digital Art. From Presenting and Collecting Digital Art to Networked Co-Curation«, in: Id. (ed.), Curating Digital Art, pp. 14–33, here: p. 19.

like setting creates a tension between the expectations associated with experiencing art – which traditionally emphasize reflection – and those associated with gaming, which emphasize immersion. Yet, as demonstrated in our discussion of the virtual exhibition environment, the need to adapt to this form of orientation introduces a rupture in the supposed seamlessness of the virtual experience and provides an entry point for reflecting on its constitutive parameters. At the same time, *DiMoDA* embraces a contemporary drive toward immediacy[58] by translating a general expectation of digital interactivity into physical space. However, *DiMoDA* also explicitly references art-specific conventions, such as the placement of artworks within a building structure, signifying a shift in reception and thus a distinction between the everyday and the artistic. It not only creates a physical exhibition structure within VR but also transports this virtual version back into the physical gallery, thus mirroring the relationships between architectures inside and outside VR. As a digital platform for collecting, archiving and exhibiting VR art, *DiMoDA* corresponds to the traditional purposes of a museum, yet proposes a VR-influenced approach to collection display – one that enables the traversal of multiple virtual worlds.

3. The Sections

As this example has shown, focusing on the relations between art, games, and everyday life is a valuable approach for broadening the perspectives from which VR art can be analyzed. Interfacings are integral to various dimensions of VR art: to the ways image, space, and time are constructed; to its modes of reception; to its means of production; and to the broader institutional and sociopolitical contexts of the medium. The framework of interfacing not only allows us to better situate the complex nature of VR art within its genealogy and current developments but also underscores the necessity of integrating research from various disciplines. In this volume, we propose the interfacing of art, games, and everyday life as a shared framework for addressing VR in art from the perspectives of philosophy, game and media studies, art history, and exhibition-making. In doing so, we aim to multiply the methodological approaches and tools for engaging with aesthetic, technological, and practical questions surrounding VR art.

58 See Anna Kornbluh (2024): Immediacy, Or the Style of too late Capitalism, London: Verso books.

The very designation of VR as »virtual reality,« that is a spatial and corporeal medium that stands in a peculiar relation to what we understand and perceive as real challenges a basic understanding of how to situate ourselves within the context of VR art. In its continuous approximation of the real, the medium itself is in constant flux, which makes it necessary to adopt philosophical perspectives in order to grasp its central concepts, experience-related phenomena, and the ways these are addressed in art. Curatorial perspectives provide insight into institutional approaches to VR art and draw attention to the pragmatic and conceptual challenges involved in the technical installation of VR, as well as to the visitor's experience – both of which differ significantly from conventional exhibition traditions. In turn, these dimensions of VR art give rise to new curatorial practices and new spatial and spectatorial concepts, responding to the altered conventions of our contemporary hybrid lifeworld.

Practical experience with VR from production contexts is equally relevant, as it reveals the scope of possibilities, default logics and limitations offered by VR, thus pointing toward future tendencies of the medium and its uses. Media studies can furthermore highlight the complex genealogies, historical virtualities, and contemporary platform-capitalist dependencies associated with VR, which are themselves subjects of artistic inquiry. Game studies and film- and theatre-studies, in turn, constitute a rich framework for aesthetic analysis, as numerous artistic practices across time-based, spatial, digital and non-digital media are often brought together in VR art. With this volume, we propose a methodological integration of these perspectives into art-historical research on VR art. Beyond proposing the tentative cluster of interfacing relations between art, games, and everyday life, we also observe a more overarching thread running through the various contributions: a tension between seriousness and playfulness. This polarity cuts across both the contexts of art museums and entertainment culture; it interfaces historical genealogies of the medium and its established uses within gaming culture; and it constitutes a particular artistic mode of navigating between the virtual and the real, one that is central to art-historical traditions concerned with conceptualizing the aesthetic itself.

Section 1 Art/Games

Genealogies of VR: Sculptures, Environments, Simulators, Magic Circles

The idea of interfacing also broadens the genealogies in which VR can be situated within art history and media culture, extending far beyond references to panoramic images and illusionistic painting. The contributions collected in this section refer, among other things, to the spatiality of objects. Because VR environments are typically produced using 3D-modeling software, objects within them can often be circulated, touched to a limited extent, and experienced in relation to the body. These characteristics evoke a long tradition of sculpture, whose photographic reproduction through photogrammetry has, in turn, developed techniques relevant to the creation of 3D models today.[59] In addition, the ability to design entire rooms relates to traditions of environmental art, which share the characteristic of enclosing the viewer – placing them in a room within a room – and emphasize sensorial, multimodal experience. Finally, among the technical precursors of VR are simulation and simulators, which had already focused on the transition between the virtual and the physical by duplicating aspects of the world.

In examining these genealogies, the contributors to this section explore how VR art often evokes references to high art while also drawing on entertainment and pleasure. In this way, VR adds another mode of engagement to the spatial and artistic constellation. Environmental art opens up a playful zone for viewers, ranging from climbing courses and spatial deformation to dancing. Yet, as the examples in this section demonstrate, the playful aspect of VR art is often contrasted with its use in creating ruptures in the seamless experience, thus highlighting, for example, VR's paradoxical intertwining of entertainment and military technology,[60] or the ambivalent potential of the virtual as a source for (de)constructing our relationship to history.

Sculptural lineages in VR art are examined in **Ursula Ströbele**'s contribution *The Afterlife of Antiquity in Virtual Reality*. She focuses on the role of art-

59 Cf. Jens Schröter (2009): 3D. Zur Geschichte, Theorie und Medienästhetik des technisch-transplanen Bildes, Munich: Wilhelm Fink.

60 Ursula Frohne (2016): »Expansion of the Immersion Zone. Military Simulacra between Strategic Training and Trauma«, in: Fabienne Liptay/Burcu Dogramaci (eds.), Immersion in the Visual Arts and Media, Amsterdam/New York: Rodopi/Brill, pp. 214–248, https://doi.org/10.1163/9789004308237.

historical references, such as when 3D scans of ancient sculptures end up in VR worlds. Contrary to a simple idea of translation, the author demonstrates that the sculptures are equipped with additional digital features as they pass through artistic asset libraries and game-engine software. Viewers of virtual worlds are thus challenged to navigate between conventional modes of reception for sculpture and experimental codes of behavior familiar from computer games. Using the counterintuitive example of materiality that, for example, on a virtual Mercury shifts from hard marble to soft rubber during a VR experience, Ströbele points out that the concept of history itself is subject to a certain elasticity through the playful and artistic use of sculptures in VR.

Curating Immersion. The Origins, 1949–1969*: Behind the Scenes and Some Afterthoughts* is the title of **Choghakate Kazarian**'s contribution, in which she reveals the curatorial, conceptual, as well as pragmatic decisions behind a major exhibition on non-digital immersive art, such as environments. She characterizes the 2023 exhibition as a response to popular VR formats like *Virtual van Gogh*, which provide spectacular immersive museum experiences of artworks that originally were not intended to be experienced this way. By proposing a pre-digital notion of immersion »as a totalizing, self-contained, and physically enveloping phenomenon«, Kazarian reflects on the selection of the exhibited artworks as »proto-VR interfaces« and discusses their relational embedding within the institutionalized museum space.

With *On Dani Ploeger's Hysteresis*, **Jens Schröter** demonstrates how different media genealogies intersect in VR art. To experience Ploeger's work, viewers sit in a self-modeled bumper car and then take a high-speed virtual ride in VR, which ultimately ends in a crash. According to Schröter, the bumper car evokes the military use of simulators for accident prevention, as well as the entertainment industry, whose appeal often lies in playfully provoking accidents. In addition to the bumper car, a fog machine forms part of the installation and provides the immersive integration of the VR work into the exhibition space simulating extreme battlefield conditions on the one hand, and evoking the aesthetics of nightclubs on the other, the installation again reveals the tension between seriousness and playfulness in a VR artwork.

Manuel van der Veen explores *The Area of the Virtual* in his contribution and, to this end, presents his concept of *areal space*. This concept is derived from a technical specificity of all XR procedures, namely that they perceive and project space. Beyond categories such as ›virtual‹ or ›real‹, which are often used to define VR as the creation of a virtual world or AR as the superimposition of reality with virtuality, the aforementioned technical specificity allows for a more

historical and theoretical connectivity. Therefore, the author examines various works of contemporary art that employ VR and reveal connections to techniques such as the floor plan and the magic circle, which also open up *areal spaces*.

Section 2 Games/Everyday Life

Concepts of VR: Space, Worldbuilding, Presence

Even though the virtual, as in the casual use of digital devices, has established itself as an integral part of our everyday life, the particular qualities and conditions of VR have prevented the technology from becoming ubiquitous. As Marcus Carter and Ben Egliston discuss, the idea of »VR occupying a more mundane role: situated in everyday domestic spaces and used for purposes beyond gaming« is still a utopia, prominently promoted by tech companies.[61] When looking at the inaccessibility of VR in terms of bodily and cognitive disabilities, for example, this vision of VR turns out to be a »libertarian, identity-free, and disembodied fantasy,«[62] rather suited fictitious worlds of computer games than to the ambiguous, messy, and material entanglements of the everyday lifeworld. The shared inheritances with the military and videogames become apparent in the constitution of the viewing apparatus of the HMD as well as in the mechanics of the game engine. On the one hand, this leads to attempts at simulating real-life scenarios. Here, virtual embodiment means an approximation to habitualized forms of bodily orientation required for a technological translation of common conceptions of space and presence into the virtual. On the other hand, VR as a tool for creating worlds encompasses practices of worldbuilding that emerged in the field of game development and proposes networked, web-based approaches to body, space, and time. By focusing on recent developments in passthrough technology, the default setting of the Guardian, as well as on virtual exhibition formats, the contributions in this section contribute to the reconceptualization of the notion of space, the phenomenon of presence, and the practice of worldbuilding.

In the chapter *The Spatial Apriori of Virtual Reality*, **Stephan Günzel** inquires into the spatial conditions of VR, which he unfolds by focusing on the tech-

61 M. Carter/B. Egliston: Fantasies of Virtual Reality, p. 57.

62 Ibid., p. 22.

nical phenomenon of the Guardian system. Originally installed as a security feature, the Guardian allows for simultaneous viewing of the immediate surroundings via video passthrough and an abstract geometric space that serves as the tectonics of virtual »architecture.« When analyzing this partly live-view based partly computer graphics-based combination – or, as Günzel puts it, following Foucault, this »empirico-transcendental doublet« – leads to three insights regarding the spatiality of VR: 1. In contrast to the much-discussed hermeticism, VR is opened up to an empirical perception of space. 2. VR is also subject to a certain spatial conception, which in turn is historically conditioned. The author demonstrates that space is not universal, but rather related to everyday life and regional circumstances, i.e. a specific lifeworld. 3. The author asks how this spatial a priori is reflected in VR. Using various VR artworks and VR computer games, Günzel discusses attempts to undermine this specific VR spatiality and declares that these ultimately do not (yet) escape their own conditionality, which has historically shaped VR.

In her contribution *World[build]ing Online Exhibitions, or Trying to Resist Zombie Curating*, **Annet Dekker** develops an analytic framework for examining virtual spaces in online exhibitions. By focusing on the curatorial practice of the artist duo New Scenario, she examines the distinction between the more static concept of digital worldbuilding, known from traditional computer-game design, and the relational, fluid, and speculative approach of worlding. Emphasizing a conceptual shift from a virtual »world-as-object« towards a »world-as-practice,« Dekker proposes a reconceptualization of VR as a response to web-based phenomena such as the inherently co-creative character of digital space, the coexistence of multiple modes of experience, as well as a distributed form of agency. In her writing, Dekker incorporates the simultaneity of multiple viewpoints that continuously complement each other and suggests a unique methodological approach to situating the position of the researcher within the worlding of New Scenario's exhibition projects.

Chris Salter questions historical concepts of presence that are prevalent in the imaginary of VR technology. In his article *Rethinking Presence in the Age of Mixed Reality*, he develops a hardware-based approach to the conception of presence, which becomes radically challenged by new forms of passthrough technology. By focusing on the genealogy of the »viewing instrumentarium« of the HMD, Salter reviews central VR literature and contrasts their notion of presence as a hermetic illusion of space with a different conception of presence from theater studies. Instead of conceiving presence and its corresponding phenomenon of immersion on the basis of a »suspension of disbelief,« he

argues for an understanding of presence as a rupture, a »shock« that highlights the experience of immersion as artifice. Salter discusses the effects of passthrough based technology as a process of »defamiliariz[ation]« of our exposure to the technology and thus proposes a reconceptualization of presence as an experience of the mediated nature of the virtual space.

Section 3 Everyday Life/Art

Modes of VR-Reception: Corporeality, Empathy, Immediacy

As becomes visible in the contributions of the first two sections, the extensive debates on immersion only partially cover the attitudes and affordances required for reception in VR. The fundamental ambiguity of the lived-body experience must be acknowledged, which also means that a »responsible subject«[63] is implied in VR. Conversely, media-infused immersion has become a general condition of the lifeworld, one that is also attributed to architecture and the ubiquitous need to perform.[64] This results in an overall aestheticization of the everyday, which oscillates between disconnecting from the physical world and a regained playfulness.

The contributions collected in the last section of the volume participate in this change of perspective by inviting a closer look at the active adjustments and conflicting expectations that shape the immediacy of embodied VR experience. These conflicts and the resulting negotiations can take place on a very basic existential level, where the body acts as an interface for self-regulation in the face of the uncertain correlations with the world. In an intensified form, this is what can be played out in VR. In other cases, the clash of different institutional settings, media dispositifs, and audience expectations rooted in the art field, can be used for basic exercises in virtuality. They don't primarily aim at improving users' interactive abilities. Instead, they deliberately train

63 Zeynep Akbal (2023): Lived-Body Experiences in Virtual Reality: A Phenomenology of the Virtual Body, Bielefeld: transcript Verlag, p. 73ff., https://doi.org/10.1515/9783839466766.

64 Cf. Laura Bieger (2015): Ästhetik der Immersion. Raum-Erleben zwischen Welt und Bild. Las Vegas, Washington und die White City, Bielefeld: transcript, and Doris Kolesch (2021): Ästhetik der Immersion, in: Georg W. Bertram/Stefan Deines/Daniel Martin Feige (eds.), Die Kunst und die Künste. Ein Kompendium zur Kunsttheorie der Gegenwart, Berlin: Suhrkamp, pp. 422–441.

them to collide with other immaterial entities in virtual space or to endure being processed by an intimidating technical apparatus. These examples can be categorized as a subtle interfacing of everyday virtual (trans)actions that are otherwise highly functional and effective in gaming and simulation but here are reclaimed and re-distributed by art.

Ksenia Fedorova and **Jose Hopkins B**. have combined their corresponding thoughts under the heading *Simulation as Attunement: Metastability, Coherence, and Embodied Orientation in Virtual Reality*. Their argument against understanding VR as self-contained, which they correlate with the supposed seamlessness of simulation, is based on the fundamental anchoring of the virtual in the body – or rather, in the constant bodily reconfiguration that characterizes the processual condition of the self. By incorporating their own findings on proprioception, interfacing, and the concept of metastability, they offer a new approach to the line of thought about virtuality rooted in sensory physicality and actual perception. Fedorova and Hopkins develop an understanding of metastable interfacing across different realities which they apply to various exercises with VR in relation to dance and gamified testing grounds for colliding bodies, as well as to avatar encounters within social VR. This approach promises insights into how meaning-making functions through the temporary formation of coherence. By clarifying what it means to feel »real« in the virtual world and how to develop a truer virtual self, the authors propose that this coherence is what makes the XR-self livable.

In their contribution *Playing Against VR. Immersive Environments between Hypermediation and Remediation*, the co-authors **Federica Cavaletti**, **Pietro Conte,** and **Andrea Pinotti** also address the truthfulness of the virtual, but from an opposite perspective. They question the claim to truth associated with the transparency of the medium and its illusion of place, which they situate in the fields of immersive journalism and VR documentaries – both important motors of VR's everydayness. In a second step, these claims are confronted with artistic, self-reflective adaptations of these very genres. The first case study examines the extent to which VR can remediate not only entertaining cinema and gaming but also the critical negotiation of authenticity in documentary film. Conversely, the second example, a Taiwanese remake of the Moon Landing, labeled as fake by conspiracy theorists, is discussed with regard to the possibilities of mockumentaries, political satire, and science in VR. According to Cavaletti, Conte, and Pinotti, VR reception is thus realized not in the overwhelming power of a problematic medium of empathy, but »in the complex interplay

between narrative construction, user performativity, and awareness of the artifactual nature of the medium.«

In the last contribution, **Manischa Partowi** offers a unique perspective on the reception of VR art. In her article *Orchestrating Expectations, or Technoromanticism in VR Art,* she juxtaposes two contemporary artistic VR examples. As becomes clear from her close reading of Jordan Wolfson's *Little Room* and Theo Triantafyllidis' *Staphyloculus*, both works invest in creating an extreme situation by physically subjugating the user to the technology. While these extraordinary situations contradict any sense of normality, everydayness is brought back into focus through various aspects of the socially coded exhibition space. At this interface between the physical and the virtual space of the artwork, the author situates the orchestration of expectations, which she identifies as a fundamental artistic strategy for engaging with and reflecting a technoromantic imaginary of VR. In Wolfson's work, Partowi recognizes the use of VR's immediacy effect as a means of fetishizing the technical apparatus. In Triantafyllidis' work, on the other hand, she observes an exposure of VR's immediacy effect, revealing the technological complexity of bodily involvement within a virtual space.

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