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Around a Table, around the World
## Facebook Spaces, Hybrid Image Space and Virtual Surrealism

On 6 October 2016, at the developer conference Oculus Connect 3 in San José, California, Facebook CEO Mark Zuckerberg presented the first working prototype of Facebook Spaces, the social media company's ambitious foray into the emerging virtual reality (VR) sector.[1] Unsurprisingly, Facebook's vision of VR is a *social* one, i.e. an attempt is made at translating the company's core business model of capitalizing social relations into a VR setting.

During the product demonstration on stage, which included Lucy Bradshaw and Michael Booth, two senior Facebook employees working in the VR team, Zuckerberg discussed all major features of Facebook's VR proposal that is available in an open beta version at the time of this writing. Only Zuckerberg himself was physically present wearing a head-mounted display, while Bradshaw and Booth were somewhere off-stage using a similar set-up to meet with Zuckerberg within Facebook Spaces, Facebook's social VR application. While the audience could only see Zuckerberg on stage talking into the air, they could turn to giant screens on which Zuckerberg's perspective of the virtual space was projected: It displayed what the headset let him see, Bradshaw and Booth virtually present via their avatars. After having showcased the comic-figure-like avatars,

including their palette of facial expressions and hand gestures, a series of immersive photo and video environments – a deep-sea scenario, the surface of the planet Mars, and Zuckerberg's own office –, and interactive affordances like playing games at a virtual table and creating 3D objects in space, the audience experienced a dizzying moment of referential disorientation. Zuckerberg transported the group of three into a different setting again, this time (supposedly) a live video-feed of his actual living room. Then he suddenly received a video call from his wife via the Facebook Messenger application on his virtual wristwatch: While her moving image appeared in VR on an oversized virtual phone display for all participants to see, she in turn saw on the display of her phone her husband's VR avatar standing in their living room with two other comic characters, the unsuspecting family dog Beast reclining on the couch in the background. The climax of the product demonstration induces at the same time a media theoretical reeling: Zuckerberg turned around for a "modern family selfie"[2], using a virtual selfie stick handed to him by Michael Booth's avatar, aligning the gigantic phone display with his wife's image next to his virtual avatar and the moving image of the dog, in the same act suturing diverse layers of referentiality into a series of photo-like static representations that appeared on the virtu-

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1 Road to VR, Facebook Social VR Demo – Oculus Connect 2016, https://youtube. com/watch?v=YuIgyKLPt3s (accessed November 3, 2017).

2 Ibid.
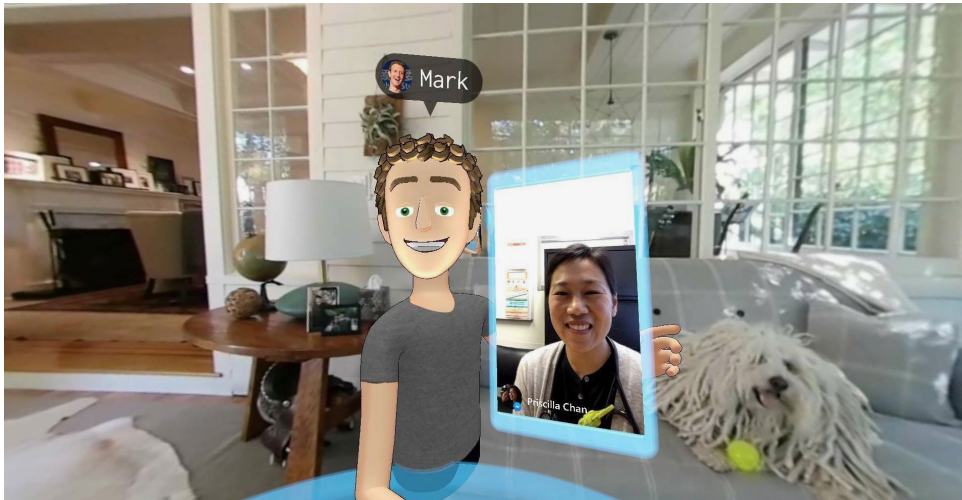
1   Mark Zuckerberg taking a "modern family selfie" in Facebook Spaces.

al table in front of him (fig. 1). Afterwards, the couple chose their favorite picture that was then effortlessly delivered to Zuckerberg's Facebook feed via the push of a virtual button on his other wrist. In Facebook's vision of social VR, the old dichotomies of actual and virtual, real and imagined, perception and action that structured major debates in the VR discourse of the 1990s seem to have irretrievably collapsed.

The above-described scene taking place in Facebook Spaces raises a series of questions concerning the character and shape of visual practices that are intended to constitute sociality in VR. Whereas screen-based practices in VR are often associated with anti-social behavior, Facebook Spaces, advertised with the slogan "VR is better with friends",

promises to change this situation.[3] What people will eventually *do* in a social VR scenario, how they will interact with each other and with diverse media content, is first and foremost an as yet unsettled question of interface design. This is evident to the designers of Facebook Spaces,[4] but we will address this question not from a design perspective, but from a media-theoretical point of view that follows Johanna Drucker's definition of "interface" understood not as an object, but as "a set of conditions, structured relations, that allow certain behaviors, actions, readings, events to occur".[5] This allows for an analysis that considers the interface mise-en-scène of Facebook Spaces as constituting a proper media *dispositif* or apparatus.[6] This apparatus assigns subject positions, orders relations between participants and – crucially – sets the stage for a radically hybrid image space, in which

3   See Thilo Hagendorff, Virtual-Reality-Datenbrillen im Spannungsfeld zwischen Empathie- und Isolationsmaschinen, in: Institut für immersive Medien (ed.), *Jahrbuch immersive Medien 2016*, Marburg: Schüren Verlag, 2017, pp. 71–79.

4   Christophe Tauziet, leading designer in Facebook's social VR team, makes this point explicit in an extensive and insightful article on *medium.com*: "One of the biggest challenges for our design team was to design the user interface of Spaces. Unlike with traditional web, desktop or mobile design where we can rely on existing UI elements and interaction patterns that people have learned over the years, most of those patterns have *yet to be invented* for VR." Christophe Tauziet, Designing Facebook Spaces, https://medium.com/@christauziet/designing-facebook-spaces-part-4-creating-a-vr-interface-821861159495 (accessed November 3, 2017). We will refer to his development report repeatedly throughout our contribution.

5   Johanna Drucker, Performative Materiality and Theoretical Approaches to Interface, in: *digital humanities quarterly* 7.1 (2013), http://digitalhumanities.org/dhq/vol/7/1/000143/000143.html (accessed November 3, 2017).

6   See Jan Distelmeyer, *Machtzeichen. Anordnungen des Computers*, Berlin: Bertz + Fischer Verlag, 2017, pp. 81–82. Distelmeyer introduces the concept of interface mise-en-scène in explicit reference to film studies to signify the need to pay closer attention to the heterogeneous aesthetic arrangements organizing the use of computers. Analyzing the complex staging of interface processes can offer different approaches to digital cultures than just assuming the computer to be a functional tool.

the line between physical and virtual entities increasingly loses significance. Applying the designers' own language, this image space can best be characterized as giving rise to a *virtual surrealism* in which long contested dichotomies concerning the status of images, perception and action dissolve into a scenario of reality-agnosticism that is equally frightening and exhilarating.[7] Our main interest concerns the ways that the ensemble of interface techniques and processes of Facebook Spaces attempts – and ultimately fails – to keep together this heterogeneous action space, especially by rather surprisingly falling back to an almost-forgotten "old medium", namely the virtual table around which the users gather.[8]

The essay is divided into three parts. First, we give an introductory account of Facebook Spaces. The focus of our description lies in understanding the *brandscape* of Facebook Spaces as a *dispositif* as described in the works of Jean-Louis Baudry, i. e. as a spatial arrangement that regulates the behavior of participants and favors specific psychic dispositions.[9] The second part of our contribution then delves deeper into the theoretical ramifications of this setup: The hybrid image space constituted by Facebook Spaces is reminiscent of a heterotopia in that it involves a confrontation of widely disparate image spaces that have to be sutured together to constitute a reliable and secure action space.

We will explore the strategies employed by the designers of Facebook Spaces to achieve this end, primarily the virtual table that acts as the central interface element and center of control. One major finding of our analysis amounts to the observation that the apparatus of Facebook Spaces, contrary to popular rhetorics of presence and immersion associated with VR, creates a strong impression of unreality by decontextualizing images and severing referential links. Finally, we discuss over-arching theoretical and normative concerns raised by our analysis: Facebook Spaces is understood as a step towards an emerging virtual surrealism – a scenario in which the affordances of digital media are taken very seriously to the extent that the referential status of images and actions in VR altogether ceases to be a relevant parameter for design and use. This also has implications for the subject positions assigned by the apparatus: In a scenario of mixed unreality, a tendency towards moral indifference can be observed and criticized.

Setting the Table – The Dispositif of Facebook Spaces

Due to the commercial availability of affordable VR hardware for the consumer electronics market, several companies have developed applications and platforms for social interaction in VR.[10] The discussions around these offerings are reminiscent of the ones that accompanied the early text-based MUDs (multi-user dungeons/dimensions) and MOOs (MUD, object-oriented) common in the 1980s and

7   See Gabriel Valdivia, Identity Transfer and the Rise of Virtual Surrealism, https://artplusmarketing.com/identity-transfer-and-the-rise-of-virtu-al-surrealism-bac751e6342c (accessed November 3, 2017).

8   See Walter Seitter, Möbel als Medien. Prothesen, Paßformen, Menschenbildner. Zur theoretischen Relevanz Alter Medien, in: Annette Keck, Nicolas Pethes (ed.), *Mediale Anatomien. Menschenbilder als Medienprojektionen*, Bielefeld: transcript, 2001, pp. 177–192, pp. 184–187.

9   See Jean-Louis Baudry, The Apparatus. Metapsychological Approaches to the Impression of Reality in Cinema, in: Philip Rosen (ed.), *Narrative, Apparatus, Ideology. A Film Theory Reader*, New York: Columbia University Press, 1986, pp. 299–318.

10 For an overview discussing different services like Bigscreen, vTime, AltspaceVR and Rec Room, see Adario Strange, Social Networking in VR is Here, and it Feels Like the Future, http://mashable.com/2017/01/12/virtual-reality-social-networks-vr/#iaf1.9tSSOqq (accessed November 3, 2017).

early 1990s, which was also the period when the cultural imaginary concerning virtual reality peaked in the all-encompassing term *cyberspace*.[11] Similar rhetorics concerning the general idea of online communities are applied in the Spaces context, including an understanding of virtual tribes defined "not by proximity but personal choice".[12] These notions are accompanied by a set of body and identity politics that were already common in the VR discourse of the 1990s, like the idea of experimenting with different types of embodiment, a fragmentation of the sense of self experienced in the relationship to one's virtual avatar, and a prevalent logic of mentally being somewhere else while the body is left behind in the physical world.

But there are also marked differences in how social VR is imagined in the present. In fact, one could go as far as to claim that VR companies apply metaphors and mental images concerning the affordances of the new medium partially dressed in the language of the 1990s, while something entirely different is happening.[13] We will focus our analysis on Facebook Spaces because the multinational social media enterprise already has access to a base of two million monthly active users, a fact that makes it especially well-positioned in the emerging social VR market. In contrast to older VR discourses that stressed possibilities of identity play and experimentation with different body types and shapes – including the wish to experience a virtual embodiment as

an abstract geometrical shape like a triangle proposed by Jaron Lanier –, the premise and imperative of Facebook Spaces is simply: "Be Yourself in VR!"[14] Rachel Franklin, head of Social VR at Facebook and former general manager for the Sims series at Electronic Arts, further qualifies this statement: "It's easy to create an identity that represents the real you in Facebook Spaces. This helps people recognize you and makes VR feel more like hanging out in person. [...] You can change your eye color, hairstyle, facial features and more until your look fits your identity. It's all about being yourself."[15] On the one hand, this idea differs greatly from the (supposedly) wildly experimental character of virtual identities in the 1990s, while on the other, it hints at a notion of idealization and purification of the self that is tightly connected to the necessities of social media self-curation.[16] It is noteworthy in this context that avatars in Facebook Spaces can neither look unhappy nor have a body that deviates too far from the norm set by its designers.[17]

Topologically speaking, Facebook Spaces can further be understood as a curious kind of virtual brandscaping: Whereas Lev Manovich discusses examples of companies giving their brand a material shape via architecture – e. g. the design of OMA/Rem Koolhaas' Prada store in New York

11 See Sherry Turkle, *Life on the Screen. Identity in the Age of the Internet*, New York: Simon & Schuster, pp. 9–19, pp. 180–186.

12 Yaser Sheikh from the Oculus research team, as cited in Matt Weinberger, Facebook's Vision of the Year 2026 is Scary and Awesome, http://businessinsider.de/facebooks-world-of-virtual-reality-in-2026-2016-4?r=US&IR=T (accessed November 3, 2017).

13 Concerning the role of such legitimizing ideologies in the history of the internet, see Patrice Flichy, *The Internet Imaginaire*, Cambridge, MA: MIT Press, 2007, pp. 10–12.

14 Facebook, https://facebook.com/spaces (accessed November 3, 2017). See Jaron Lanier, Technology, http://globetrotter.berkeley.edu/people5/Lanier/lanier-con2.html (accessed November 3, 2017).

15 Rachel Franklin, Facebook Spaces: A New Way to Connect with Friends in VR, https://newsroom.fb.com/news/2017/04/facebook-spaces/ (accessed November 3, 2017).

16 See Mark Zuckerberg: "You have one identity. [...] Having two identities for yourself is an example of a lack of integrity." As cited in Karl Wolfgang Flender, #nofilter? Self-Narration, Identity Construction and Meta Storytelling in Snapchat, in: Florian Hadler, Joachim Haupt (ed.), *Interface Critique*, Berlin: Kulturverlag Kadmos, 2016, pp. 163–182, p. 172.

17 See Kyle Riesenbeck, Facebook Won't Let Me Be Fat in VR, http://revvrstudios.com/facebook-fat-in-vr (accessed November 3, 2017).

that makes heavy use of electronic displays to create an "augmented space" –, the challenge for Facebook lies in translating their product into a VR environment that serves as the condition and backdrop of user interactions.[18] Where the brandscaping described by Manovich worked by integrating screens into physical architecture, within the apparatus of VR screens create an image space which must be provided with virtual architecture. Although this environment is a thoroughly virtual one, the actions that are possible in it are fundamentally physical, i. e. they comprise a set of gestures and interface operations involving the whole body. In the following, we will first give an introductory description of the environment of Facebook Spaces by understanding it as a media *dispositif* or apparatus in the sense of Baudry. This serves to prepare a more detailed analysis of the hybrid image space constituted by Facebook Spaces in the following chapter. Baudry distinguished the

> basic cinematographic apparatus [l'appareil de base], which concerns the ensemble of the equipment and operations necessary to the production of a film and its projection, from the apparatus [le dispositif] [...], which solely concerns projection and which includes the subject to whom the projection is addressed.[19]

It is the latter apparatus in the sense of a spatial arrangement of objects and bodies that interests us most; although it is impossible to separate this completely from the data infrastructures and economies constituting the position of Facebook in the contemporary social media business. In Baudry's account, the apparatus of cinema served first and foremost to create an "impression of reality [...] dependent on a subject effect", i. e. the apparatus tends to make itself invisible in order to constitute a simulation of the real.[20] This only works because the cinematographic subject enters a "state of artificial regression" which leads to "a lack of differentiation between the subject and its environment" and thus a "partial elimination of the reality test".[21] Without reconstructing the intricacies of apparatus theory at this point, it suffices to say that the main thrust of the argument is to claim that the technical apparatus of cinema produces ideological effects independently of what is projected.

As others have shown, apparatus theory can deliver an adaptable conceptual framework to describe the ideological effects not of media content but of media themselves.[22] But, of course, cinema and VR are two fundamentally different media. Not only is the production process of VR applications, at best, only partly comparable to the production of movies, but the act and context of reception differs widely from cinema. The apparatus of cinema consisted of viewers who were physically restricted in a darkened room to watch unreachable images projected from behind their back.[23] In contrast, users of VR look onto light-emitting screens directly in front of their eyes locking out non-screen reality to see images which they can interact with. In fact, the positioning of screens is one of the core differences between the apparatus of cinema and the apparatus of VR/Facebook Spaces: Whereas spectators in the cinema are always in principal

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18 Lev Manovich, The Poetics of Augmented Space, in: *visual communication* 5/2 (2006), pp. 219–240, pp. 234–235. The term *brandscaping* is here attributed to Otto Riewoldt.

19 Baudry 1986 (as fn. 8), p. 317.
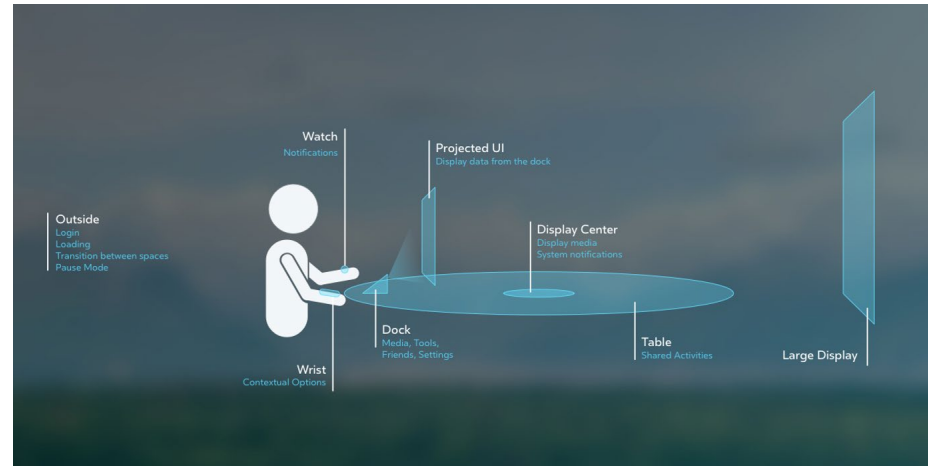
20 Ibid., p. 312.

21 Ibid., p. 313.

22 See Knut Hickethier, Dispositiv Fernsehen. Skizze eines Modells, in: *montage a/v* 4/1 (1995), pp. 63–83.

23 See Jean-Louis Baudry, Ideological Effects of the Basic Cinematographic Apparatus, in: *Film Quarterly* 28.2 (1974), pp. 39–47, p. 44f.

2   Apparatus_1: Users with VR headsets.

3   Apparatus_2: The *dispositif* of Facebook Spaces.

able to see the edges of the screen, screens in VR occupy the user's whole field of vision which even makes it necessary to simulate screens virtually to allow for specific operations. Therefore, one defining trait of VR one must consider if its ideological effects are to be analyzed is that, unlike cinema, it not only consists of the technological apparatus and content of the images but also of another mediating virtual layer.

In the case of Facebook Spaces, one would thus have to assume a double apparatus in the sense that the user first has to set up a space for the hardware, don a VR headset, and get proficient with a set of physical controllers. These taken together comprise a material interface arrangement or apparatus_1 that has become an iconic visual reference to VR technology in press reporting and advertising alike (fig. 2). The hardware in turn allows entry into a virtual action space that will be addressed as apparatus_2 in the following: It constitutes a visual setting with specific affor-

dances and limitations that assigns subject positions and regulates participants' social behavior. We are interested in the set-up of this second apparatus and will further specify its various components as the interface mise-en-scène of Facebook Spaces (fig. 3).

In the most recent public beta version, the environment of Facebook Spaces is imagined not so much as the "infinite wonderland" of cyberspace so prevalent in the cyberpunk imaginary of the 1980s and 90s but rather more closely resembles the familiar surroundings of a "dinner party" with family and friends.[24] That is, if one is willing to ignore the highly technical composition of this virtual

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24 The juxtaposition of wonderland and dinner party is taken from Rachel Rubin Franklin. See Peter Rubin, Facebook's Bizarre VR App Is Exactly Why Zuck Bought Oculus, https://wired.com/2017/04/facebook-spaces-vr-for-your-friends/ (accessed November 3, 2017). Both, of course, can be traced back to Carroll's literary blueprint.

4   Birthday party at the virtual table of Facebook Spaces.
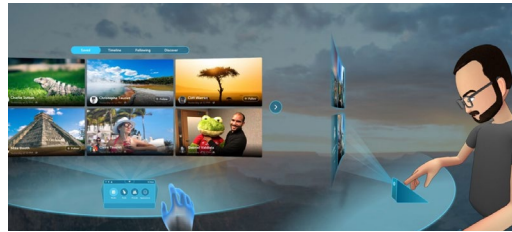
5   VR Dock 2.0, main navigation tool of Facebook Spaces.
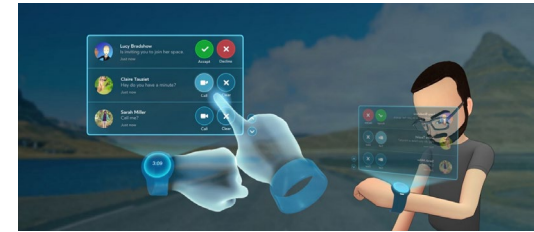
6   VR Watch 2.0, notification center in Facebook Spaces.

dinner party: The participants' cartoon-like avatars – that can be modelled after the users' likings using a photograph in the initial setup phase – gather around a virtual table that acts as the center for a diverse range of practices (fig. 4).[25] Each avatar is assigned a fixed position at the table of which four are available in total. Directly in front of each avatar is a small projector – dubbed VR Dock 2.0 by the developers – that acts as an individual access point to the users' personal Facebook content like images and videos, as well as third party content and a palette of interface tools like a pencil, a selfie-stick with a camera and a mirror (fig. 5). Apart from the dock, each user has at his or her disposal a virtual watch fitted to the avatar's left wrist that delivers notifications, e. g. about incoming calls via the Messenger app, and a user interface placed on the right wrist which gives contextual options equivalent to a right mouse-click in a desktop graphical user interface (fig. 6). The middle of the table houses the so-called Display Center: Media content can be placed in this circular area via hand gesture and is then either projected onto a large display visible to all participants in the case of traditional photographs or videos,

or – in the case of 360° video content – onto the (imagined) walls of the virtual enclosure to constitute a shared environment. Sociality in Facebook Spaces is fundamentally and purely a screen-based practice, with the added twist that screens only ever appear as virtual constructs inside the user's perceivable action space. The scenario could also be described as an echo chamber of projections cohabited by up to four subjects that share traces of their memories in a consensually constructed dream world (fig. 4–6).

While a lot of the elements of the interface mise-en-scène of Facebook Spaces are quite innovative, the designers of Facebook Spaces draw on several interrelated HCI (human-computer interaction) conventions and established action patterns to define the operational modalities of the virtual environment. First among these is the idea of "direct manipulation" that has been popularized by the desktop metaphor of graphical user interfaces (GUIs) since the 1960s: Users can handle graphical representations of data like personal files and folders with intuitive gestures without the need to attain expert programming skills.[26]

25   The following description of the various interface elements of Facebook Spaces is mainly adopted from Tauziet's informative article mentioned above.

26   See Florian Hadler, Daniel Irrgang, Instant Sensemaking, Immersion and Invisibility. Notes on the Genealogy of Interface Paradigms, in: *Punctum* 1.1 (2015), pp. 7–25.

Many action routines situated in this paradigm have been further simplified and extended with the popularization of touchscreen interfaces, especially in mobile devices like smartphones.[27] Thus, many of the surfaces inside the apparatus_2 of Facebook Spaces are "touch-sensitive" and react to gestural inputs.[28] The designers also resort to general ideas from the tangible interaction paradigm first introduced by Hiroshi Ishii and Brygg Ullmer from the MIT Media Lab: Whereas the original vision of "tangible bits" aimed at augmenting physical objects to bridge "the gap between the worlds of bits and atoms", in Facebook Spaces users act in a completely virtual environment inside which abstract data processes are translated into physical activities with a spatial dimension.[29] For example, when using an in-built feature to live-broadcast from Facebook Spaces, a stream of friend's comments is visualized in the virtual environment and users can pull single comments out of this stream and interact with them spatially as if they were large sheets of paper.[30]

Other user-created objects like sketches, drawings and photographs made with the selfie-stick, or drawn from users' accounts constantly and increasingly litter the shared space of the virtual table or float freely around the avatars. All in all, this quickly leads to a dizzying array of visual elements that can get overwhelming and messy, which is documented by user experience videos uploaded to YouTube.[31] In the next section, we will generalize from these usability issues and understand them as indicating a representational crisis of the hybrid image space constituted by Facebook Spaces. The virtual table, employed as an element of the interface mise-en-scène to constitute a "space of affordances and possibilities structured into organization for use", inadvertently produces this crisis in the first place.[32]

Plights of the Round Table – How to Control a Hybrid Image Space

While Facebook has been discussed as a heterotopia before, we propose that this holds true even more for Facebook Spaces.[33] Its heterotopic character can be described on several levels: We would like to argue that VR in general constitutes a heterotopia on the level of apparatus_1, whereas the social VR scenario on the level of apparatus_2 intensifies this heterotopic character by drawing together and juxtaposing diverse types of images and screens. The hybrid image space thus constructed is the subject of interface design efforts to make it cohere and counter its diverging tendencies.

27 See Timo Kaerlein, Aporias of the Touchscreen. On the Promises and Perils of a Ubiquitous Computing, in: *NECSUS. European Journal of Media Studies* 1/2 (2012), https://necsus-ejms.org/aporias-of-the-touchscreen-on-the-promises-and-perils-of-a-ubiquitous-technology/ (accessed November 3, 2017).

28 The question of whether interactions inside a virtual environment can and should still be addressed as screen operations or whether it makes more sense to treat them as a new category in HCI has been debated as early as 1991 in Meredith Bricken, Virtual Worlds. No Interface to Design, in: Michael Benedikt (ed.), *Cyberspace. First Steps*, Cambridge, MA: MIT Press, 1992, pp. 363–382. Bricken wholeheartedly affirms a paradigm shift "between traditional interface design and designing virtual worlds" that is compared to the difference between watching the ocean from a boat and diving into it with a scuba gear set. Ibid., p. 364.

29 Hiroshi Ishii, Brygg Ullmer, Tangible Bits. Towards Seamless Interfaces Between People, Bits and Atoms, in: *Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems (CHI '97)*, New York: ACM, 1997, pp. 234–241, p. 240.

30 See Mike Booth, Live from Facebook Spaces: A New Way to Share VR with Friends, https://newsroom.fb.com/news/2017/07/live-from-facebook-spaces/ (accessed November 3, 2017).

31 See TWit Netcast Network, Facebook Spaces VR Test Drive, https://youtube.com/watch?v=_kGRpSd4vnc (accessed November 3, 2017).

32 Drucker 2013 (as fn. 5), p. 31.

33 See Robin Rymarczuk, Maarten Derksen, Different Spaces. Exploring Facebook as Heterotopia, in: *First Monday* 19.6 (2014), http://firstmonday.org/ojs/index.php/fm/article/view/5006/4091 (accessed November 3, 2017).

First and foremost, Facebook Spaces is built on a system of openings and closures that is fundamental for its operations. As Foucault describes in his well-known lecture *Of Other Spaces*, entering a heterotopia is often regulated by rites or acts of purification, which play an import part in setting these places apart by isolating them from normal places.[34] In the case of Facebook Spaces, as with any other virtual environment, this division is implemented by the apparatus_1, i.e. the hardware and software necessary to enter VR. In particular, the head-mounted display serves to exclude the user's perception of the actual surrounding space while enclosing him or her in a virtual image space.[35] At the same time, the user's body moves in a space measured by several sensors, which capture head and hand movements to map them onto the avatar's body in virtual space, thereby inducing a strong reality effect.[36]

But once they enter Facebook Spaces, users find that they are not allowed to wander around in virtual space at their leisure, rather they are embodied as leg-less avatars gathered around a virtual table. These avatars are fixed in a position from which every user could at any time see any of the up to three other users in their instantiation of Facebook Spaces and with whom they could now engage. The possible interactions themselves are highly preformatted by the interface, making it difficult to talk of actions in an emphatic sense. Especially screen practices within the

virtual environment mimic highly conventionalized actual practices with the help of virtual objects characterized by certain affordances, e.g. taking a selfie with a virtual selfie-stick.[37] Glitches aside, the interface arrangement of Facebook Spaces creates a "regime of control" which, at first glance, contradicts the rhetorics of limitless freedom generally applied to VR.[38] But, as became apparent during the design process, another system of opening and closing, not unlike the one granting access to the greater heterotopia of VR itself, had to be established to connect users to their friends via Facebook Spaces. The designers soon discovered that one particularity of VR is that many problems of actual space repeat themselves within the virtual space they created. The reproduction of more traditional social settings chosen in older virtual worlds and other contemporary social VR applications (like living rooms or bars) did not bring their users together effectively enough to let them engage in social interactions. On the contrary, "when able to freely move around, people tended to get lost and weren't really interacting with each other", according to Facebook Spaces lead designer Christophe Tauziet.[39] Therefore, the seemingly rigidly controlled virtual action space we addressed earlier as apparatus_2 was implemented to more closely define the range of possible social connections and interactions granted by the user interface. The key design element of this solution is the virtual table. Media theorist Walter Seitter acknowledged the mediality of tables early on, describing their ability to keep things – and people,

34 See Michel Foucault, Of Other Spaces. Utopias and Heterotopias, in: Neil Leach (Hg.), *Rethinking Architecture. A Reader in Cultural Architecture*, New York: Routledge, 1997, pp. 330–336.

35 See Michael Friedmann, Kathrin Friedrich, Moritz Queisner, Christian Stein, Conceptualizing Screen Practices. How Head-Mounted Displays Transform Action and Perception, in: *Media Tropes* VI.1 (2016), pp. i–v.

36 See Hartmut Winkler, Reality Engines. Filmischer Realismus und Virtuelle Realität, http://homepages.uni-paderborn.de/winkler/reality.html (accessed November 3, 2017).

37 The status of the resulting pictures remains unclear: Should one consider them as photographic images or rather as screenshots?

38 Sabine Wirth, Between Interactivity, Control, and 'Everydayness'. Towards a Theory of User Interfaces, in: Florian Hadler, Joachim Haupt (ed.) *Interface Critique*, Berlin: Kulturverlag Kadmos, 2016, pp. 17–35, p. 18.

39 Tauziet (as fn. 4).

7   Hybrid image space – Video chatting within Facebook Spaces.

one might add – together and present them to make them available for communication ("*Verkehr*").[40] The designers of Facebook Spaces tried to employ exactly this ability to keep things together in VR.

However, the fundamental logistical capabilities of the table to draw things and people together in social VR are challenged by the same acts of communication it makes possible in the first place. One of the ways users can interact is by taking and sharing pictures and videos, thereby perforating the virtual space and linking it with other media and actual spaces. Foucault described the ability of heterotopias to juxtapose several spaces in one space that are in themselves incompatible – a heterotopia is not just a different

space, it also brings together different spaces.[41] Tellingly, among the examples he chose to illustrate the concept of heterotopia are the theater, which brings several places onto the stage, and the cinema, "a very odd rectangular room, at the end of which, on a two-dimensional screen, one sees the projection of a three-dimensional space".[42] Foucault's examples seem rather tame compared to Facebook Spaces. In fact, if you have stood around a virtual table floating in a neon-colored shifting psychedelic space age scenario while video chatting with a friend wearing a digital cat on his head and then attempt to document the action using a virtual selfie stick, you might wish yourself back in the manageable space of a cinema (fig. 7).

All these heterogeneous spaces, like the users themselves, are centered around the virtual table to create a disturbing onslaught of many different screens and images with varying degrees of realism that seem to collapse onto the user. The designers foresaw this possibility which led to the decision to support users with the ability to pause their experience should it become too overwhelming.[43] What the designers did not anticipate, or at least not explicitly provide for, is the effect that the interface design has on the referential status of images churning through the apparatus.

We would like to argue that the effects of apparatus_1, the HMD and sensors in your living room, and apparatus_2, the virtual table and its plethora of gateways into

41 See Foucault 1997 (as fn. 34), p. 334.
42 Ibid.
43 See Tauziet (as fn. 4): "Whenever people want to *take a break* from their experience, whether that's because the pizza delivery guy is knocking at the door, there's a destabilizing shaky 360 video around them, or they're feeling uncomfortable, they can pause their experience by pressing the *pause button* located on the inside of their wrist, or by taking their headset off. This teleports them out of the space momentarily and into a 'paused space', giving them a chance to catch their breath and take action if needed (resetting the space, muting/kicking people out, reporting content…)."

40 Seitter 2001 (as fn. 8), pp. 178–179.

other image spaces, interfere in a specific way. Not unlike the apparatus described by Baudry, the apparatus_1 of VR evokes an *impression of reality* that is, if anything, stronger than in cinema, because the subject in VR actually occupies the perspective focal point from which space is constructed. As perception and action are tightly coupled in VR, the ensuing sensorimotor coupling between the image and the user's body can create highly convincing illusions of embodiment.[44] But at the same time apparatus_2 leaves a strong *impression of unreality* as it cuts any referential links images might have held in the past. This effect is increased by the CGI-based user avatars whose positioning and appearance is completely arbitrary with reference to the photographic image backgrounds. Images in Facebook Spaces may change places, be replaced or be subjected to post-production effects at a whim, whether or not they themselves were calculated or taken. Even though it is well-known that digital or digitized images can be manipulated in this way, *traditional* screen practices constituted a symbolic space explicitly distinct from actual space to enable these kinds of operations. The same does not hold true for VR which does not place its screen before a user as a manipulable object but wraps itself around the user's head.

Whereas cinema, as described by Baudry, depended on an interplay of psychological and architectural mechanisms to render its apparatus invisible, apparatus_1 of VR is physically invisible because it is situated outside of the user's perceivable space while simultaneously constituting this perceivable space.[45] HMDs make it specifically their point to place the user within a symbolic space which claims to be real while shutting out non-symbolic space – screens are no longer an object within the users' field of perception but their only means of visual perception.[46] The distinction between symbolic and non-symbolic space is further undermined by Facebook's advertising language, which reproduces well-known topoi of presence and immersion, by promising to bring people together in one room and to "transport you to new places" with the help of 360° videos.[47] In effect, one may say that Facebook Spaces, due to the interference of apparatus_1 and _2, generates a *real* symbolic, within which the distinction of real and symbolic collapses, thereby evoking an *impression of surrealism*, i. e. seemingly realistic representations of an unlikely and often bizarre character.

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44 To some extent, this has already been the case for videogames. See Serjoscha Wiemer, Körpergrenzen. Zum Verhältnis von Spieler und Bild in Videospielen, in: Britta Neitzel, Rolf F. Nohr (eds.), *Das Spiel mit dem Medium. Partizipation – Immersion – Interaktion*, Marburg: Schüren, 2006, pp. 240–260.

45 In turn, the general invisibility of apparatus_1 often makes it necessary to simulate visual representations of physical controllers, keyboards and other input devices inside apparatus_2. This leads to the effect that users interact with images of devices they are actually holding in their hands because their field of vision is blocked by the head-mounted display.

46 This observation is supported by an article on wired.de reporting from Facebook's developer conference F8. Visitors who wanted to test Facebook Spaces were presented the headset by Facebook employees with the words: "Here are your eyes." Elisabeth Oberndorfer, F8. Die neue Social-VR-App von Facebook im Test, https://wired.de/collection/tech/facebook-spaces-vr-virtual-reality-oculus-rift-app (accessed November 3, 2017).

47 Facebook, https://oculus.com/experiences/rift/1036793313023466/ (accessed November 3, 2017).

8 Mark Zuckerberg and Rachel Franklin visiting Puerto Rico in VR.

"A new era of reality has arrived."[48] Virtual Surrealism and the Loss of Referentiality

A different scene, uploaded to Facebook on 9 October 2017, shows Mark Zuckerberg and Rachel Franklin in a promotional video, advertising the features of Facebook Spaces while teleporting to different locations around the world, most remarkably a 360° video of Puerto Rico devastated by hurricane Maria. Their good-humored avatars frolicking around and high-fiving in front of images of the catastrophe, Zuckerberg and Rubin indulge in the experience of being there without leaving the comfort of their respective

offices – "one of the things that's really magical about VR is you can get the feeling you're really in a place" (fig. 8).[49] It is here, in this "bizarre"[50] and "awkward"[51] video that was almost instantly perceived as a huge PR disaster, that the apparatus of Facebook Spaces instantiates what can most accurately be described as a disturbing kind of virtual surrealism. Despite all assurances of experiencing a sense of presence, the effect of the apparatus amounts not so much to an illusion of transparency, but an *illusion of homogeneity* of the images acting as the background for the virtual sociality of Facebook Spaces. (fig. 8)

This illusion – the sense that there are no substantial differences between the referents of the images processed by the apparatus – is ultimately grounded in the digital character of these images: Digital photography has finally lost all traces of indexicality in the world of Facebook Spaces. The smartphone camera has indeed advanced to "the first [mass-distributed, TK/CK] augmented reality platform" that includes possibilities of enhancing one's images with various special effects and of manipulating photos with the help of advanced object recognition capabilities, e.g. to remove elements from them that disturb the staging of a perfect vacation shot.[52] Accordingly, images on Facebook

48 HTC Vive, Vive Pre CES 2016, https://youtube.com/watch?v=CB9ecPgZlq0 (accessed November 3, 2017).

49 Mark Zuckerberg, as quoted in: Olivia Solon, Mark Zuckerberg "Tours" Flooded Puerto Rico in Bizarre Virtual Reality Promo, https://theguardian.com/technology/2017/oct/09/mark-zuckerberg-facebook-puerto-rico-virtual-reality (accessed November 3, 2017).

50 Ibid.

51 Alison Maine, Mark Zuckerberg Took His VR Avatar to Puerto Rico, and It Was Just So Awkward, http://mashable.com/2017/10/09/mark-zuckerberg-virtual-reality-fail-puerto-rico/#Zgoe6d4m_qqC (accessed November 3, 2017).

52 Mark Zuckerberg in Engadget, Facebook Spaces Announcement | F8 in Under 10 Minutes, https://youtube.com/watch?v=JXYmpqdhHzg (accessed November 3, 2017). In the same video, Zuckerberg explains another feature with the words: "You can add a second coffee mug so it looks like you're not having breakfast alone."

are becoming more and more self-referential in that they cease to point to any external referents whatsoever and instead exhibit the near limitless possibilities of digital image manipulation.

Currently, influential voices like VR filmmaker Chris Milk talk of VR as an "empathy machine", and some attention has been attracted by the application of VR technology to treat US soldiers' PTSD by confronting veterans with vivid simulations of traumatic events.[53] Our analysis of Facebook Spaces runs counter to these expectations and conceptualizations by grounding the unsettling moral indifference documented by the Zuckerberg/Rubin video media-theoretically in the fundamental disinterest towards the referential status of the images that are made part of the apparatus of Facebook Spaces. Virtual surrealism in the sense described here entails a form of reality-agnosticism: The question if and how something is grounded in any materiality outside the apparatus seems to have lost all relevance in Facebook Spaces. By providing the sort of interface criticism we have undertaken in our article, we can shed light on some of the ways that the operationality of VR interfaces itself contributes, once again, to an agony of the real.

Figures

1   Facebook, Mark Zuckerberg.

2   BagoGames, https://flickr.com/photos/bagogames/26104037025, Creative Commons Attribution 2.0 Generic (CC BY 2.0).

3–6   Facebook, permission to use granted by Christophe Tauziet.

7   Jan Kaerlein, Timo Kaerlein, Christian Köhler.

8   Facebook.

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53 Chris Milk, How Virtual Reality Can Create the Ultimate Empathy Machine, https://ted.com/talks/chris_milk_how_virtual_reality_can_create_the_ultimate_empathy_machine, (accessed November 3, 2017). See also Kathrin Friedrich, Therapeutic Media: Treating PTSD with Virtual Reality Exposure Therapy, in: *MediaTropes eJournal VI.1* (2016), pp. 86–113.