The changing face of VR

Pushing the boundaries of experience across multiple industries

Edited by

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An edited book is a unique kind of beast. We (Jordan Frith and Michael Saker) have each written our own books, but this was the first edited collection either of us had ever put together. The entire process is so different from writing a monograph, and it requires so many people to do so many great things along the way. Consequently, we want to start this acknowledgment section in a fairly obvious place: the authors who contributed to this collection. The two of us wrote a book proposal, evaluated abstracts, assigned peer reviews, gave individualized feedback, and wrote the intro. But it's the authors themselves and the excellent work they did that make this book what it is. They put up with super specific—maybe overly specific—type-A instructions from Jordan about everything from heading styles to language conventions. And they wrote these chapters, met their deadlines, and produced insightful work during a pandemic when so much else was going on. We cannot express enough thanks for the amazing work all the contributors did for this book, and it's just as much each of theirs as it is ours.

When we dreamed up this book, our ideal goal was to put a bunch of authors from different backgrounds into conversation about the ways Virtual Reality (VR) is emerging across various industries. And through a good amount of luck, we received so many great abstracts and what you're holding in your hands is pretty much the exact collection we dreamed of. The authors in this collection include researchers trained in multiple academic disciplines and practitioners who have extensive applied experience writing and developing for VR. The authors are also from four different continents, and they cover areas of expertise that range from screenwriting to environmental communication to live theatre. We are grateful that, through their experiences and efforts, the authors in this book provide a perspective on VR across industries that extends far past the more typical VR focus on gaming or social media. Our names might be on the cover of this book, but this book is the product of so many different contributors who taught us so much as we worked with them to develop their chapters.

We also want to thank everyone at Vernon Press for making this book possible. We have both worked with multiple publishers, and the Vernon Press experience was one of the smoothest either of us have ever had. Our editors were responsive and helpful, and the guidelines they provided were clear and detailed. This book took a lot of work, but neither of us can imagine how much more work it would have been without the solid guidance from the Vernon Press staff.

Now we want to switch to some brief individual acknowledgments, starting with Jordan.

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Preface

David P. Parisi

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"*Virtual Reality* won't merely replace TV. It will eat it alive."

-Arthur C. Clarke, quoted on the back cover of Howard Rheingold's
Virtual Reality (1991)

This collection arrives at a pivotal moment for VR. As Frith and Saker outline in their introductory chapter of this volume, after several cycles of "hype and disappointment" (p. 1) around the technology dating back to the 1980s, we're now seeing an unprecedented amount of commercial investment in VR across a wide range of industries. While use cases for this latest generation of headsets released in the mid-2010s initially focused on gaming, they gradually began expanding to include the wide range of applications covered in this book, with VR seen as a social space, teaching tool, a potential replacement for retail commerce, a tool for design, a means of artistic creation and consumption, and a new mode of storytelling and performance. And at these early stages of VR's most recent wave, fragmentation in VR hardware landscape presented an obstacle for both creating and consuming VR content. The issue of fragmentation could be lessening, however. Meta's (formerly Facebook) standalone Quest 2 headset, retailing for $300 USD, has effectively emerged as the consumer standard, with roughly 15 million units sold as of June 2022.

Despite these positive developments, VR's future trajectory is still very much an open question. Proponents and enthusiasts often speak of its widespread adoption as a foregone conclusion, with VR headsets forecasted to eventually replace smartphone screens as the standard mode of both consuming traditional media (strapping on a headset to watch a Netflix show, for example) and networked digital communication (where multiuser 3D virtual environments like *Horizon Worlds* supplant traditional social media platforms). Because VR provides a purportedly more embodied and "natural" way of interacting with media, existing media forms, according to this narrative, will be left behind by a kind of mediatic evolution. This story is exemplified by enthusiasts' adoption of the derogatory term "pancake game" to denote non-VR video games, which situates VR as the next step in a progressive media evolution that will more fully capture the senses and project the body into computer-generated worlds. As with Clarke's quote above, from over 30 years ago, the assumption here is that

VR won't emerge as a mere complement to existing media forms but rather that it will rapidly make them all obsolete.

At the same time, there's also a persistent evolutionary promise baked into current-gen hardware, an assurance that each component of the current VR interface will gradually improve: headsets will get lighter, screens will increase in resolution and response rate, haptic cues will grow increasingly complex and target a wider surface of the body, motion and gesture recognition will become more accurate, and VR will even expand the range of senses it simulates to even include taste and smell (and it's worth recalling here that in Ivan Sutherland's foundational "The Ultimate Display," he suggested that it should "serve as many senses as possible"). VR in the future will not only make today's media obsolete; it will also make today's VR obsolete.

These deterministic narratives about the inevitability of VR's proliferation and evolution have been buoyed by its recent popular cultural portrayals as a ubiquitous technology. The film *Ready Player One*, when it arrived in theatres in 2018, provided a cinematic depiction of a future where networked VR is widely adopted, immensely popular, and deeply integrated into our social fabric. Although the film positions VR as central to a corporatized dystopia, enthusiasts routinely point to *Ready Player One* as an aspirational illustration of where the technology will inevitably bring us.

Proponents present the deep integration of VR into the social fabric as desirable because they argue VR's increased uptake will lead to broad-based social progress. From its earliest days, more than three decades ago, VR has often been presented in these utopian terms. But the current marketing push has expanded the range of VR's supposed transformative powers. Some of these claims are echoed in this volume, albeit in more muted tones. VR can function as "the ultimate empathy machine" (Milk, cited in Maraffi, this volume, p. 22), allowing us to inhabit the bodies of others, gaining a greater understanding of their embodied experiences, and thereby helping to decrease racist, sexist, and ableist attitudes. With its purported superiority to previous modes of communication, it can serve as a suitable substitute for face-to-face interaction, ameliorating the feelings of loneliness and disconnection that still plague remote communication. Through its "quasi-physicality" (Evans and Rzeszewski, this volume, p. 144), VR can provide a functional replacement for physical space, with embodied spatial cues sufficiently cementing associations between memories and computer-generated environments. It might heighten student engagement in the classroom, leading to better learning outcomes and broader access to quality education, as promised in Meta's recent announcement that it has begun partnering with colleges to turn their campuses in "metaversities. It has the potential to increase feelings of credibility and objectivity in journalism (see Greber, this volume). It will motivate us to exercise, with its immersive

character allowing it to succeed where other attempts to push 'exergaming' have failed. At this stage in its hype cycle, it's difficult to imagine a challenge VR proponents *haven't* offered to solve with a sprinkling of metaverse dust.

The problem with this sort of crude technological solutionism—where we turn to technology to solve problems that are social at their core—concerns its deferral of responsibility: if we're waiting for the technology's increased proliferation and rapid maturation, we're hitching our hopes for social progress to corporatized wagons, repeating the mistakes with Web 3.0 that we made with Web 2.0, while also obscuring the possibility that VR might exacerbate rather than address this wide range of social issues. Commendably, while the authors in this volume excitedly explore the new possibilities VR opens up, they do so without resorting to deterministic and techno-utopian narratives pushed by marketers and profiteers. Confronting VR requires us to treat it as a technology without an inevitable and fixed trajectory, one that manifests differently depending on the sociocultural and economic context in which it's deployed. The question of "what can and will VR do?" is best answered by looking at what VR *is* now doing in practice: how VR is being actively used by practitioners and how that use is prompting them to revise and rethink and reconceptualize their existing practices.

By including contributors working in a range of roles, this collection also speaks effectively to the question of who is doing VR development and the challenges VR poses to established modes of media creation and production. Consequently, this collection effectively presents a pragmatic response to this challenge. Sampling broadly from applications beyond gaming, the chapters provide a comprehensive picture of VR—simultaneously as a platform, as a medium, as a technology, as an aesthetic orientation, as an authoring tool, as a genre, and as a business model—that expand our understanding of how thoroughly VR could work across existing communicative practices.

In their introduction to this volume, Frith and Saker repeatedly invoke the idea of VR's imminent arrival, noting that it would, at present, "still be a stretch to say that VR has gone fully mainstream" and then (I think quite justifiably) claiming that "the technology is closer than it ever has been before." (16) This raises another pressing methodological: what criteria we will use to evaluate VR's success or failure? What threshold will VR have to cross in order for us to say it's "gone fully mainstream"? If VR is getting "closer," from whose perspective? Is it a question of solving the many technical challenges that continue to impede its proliferation (including poor graphical fidelity, lack of realistic haptics, ergonomic issues owing to the bulk and weight of headsets, and the ongoing issue of simulation sickness)? Or does VR have to demonstrate a broad-based cultural appeal that we have yet to see evidence of? And how do we speak to these questions without simply parroting the inflated claims of well-funded VR

propagandists with a vested interest in its success, or conversely, without dismissing the experiences of enthusiasts who've already had meaningful and transformative experiences enabled by VR interfaces? In short, the open question for us is an evaluative and methodological one: at what point do we start assessing VR based on its actual impact rather than its potential—or virtual—effects?

This all loops us around to the value of the perspectives brought together in this collection. If VR continues to grow, the chapters that follow will be read as previews of a technocultural future where VR is broadly diffused into a range of practices, reshaping them to accommodate this new mode of communication. If VR stagnates, however—if Meta abandons its recently-announced multibillion dollar investments into the technology, if VR contracts back to a narrower focus on gaming applications, or if it merely remains a niche technology with a dedicated core of enthusiasts but not much else–these chapters will read instead as indexes of futures never manifested, snapshots of the technology in a moment of enthusiastic and creative expansion. These practice-based approaches detail the opportunities presented by the new medium while also showing how VR challenges our existing vocabularies and frameworks of creative practice.

Chapter 1

Introduction:

The winding road of Virtual Reality (VR) development

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Abstract

This introductory chapter examines the long history of Virtual Reality (VR) and its potentially bright future. The chapter begins by discussing major corporations' significant investment in VR. The authors argue that this significant investment will likely expand VR to more and more industries, which makes the case studies found throughout this book even more relevant. The chapter then details the long history of hype and disappointment about VR before examining its "Renaissance" in the mid-2010s. The chapter then describes the structure of this edited collection and the wide range of topics covered in the book and concludes by arguing that the future of VR is brighter than it ever has been.

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Introduction

We began soliciting chapters for this book in the fall of 2020 at a point when Virtual Reality (VR) was clearly on an upswing. That fall, Facebook released the Oculus Quest 2—an updated version of its wireless predecessor—which was an immediate hit. And, of course, we were over half a year into the COVID-19 pandemic. For the most part, live events and travel had come to a screeching halt, and in some cases, VR designers had designed platforms to partially fill the void left by travel restrictions. Consequently, the moment seemed ideal to bring together a diverse group of academics and practitioners doing research on disparate forms of VR. VR's popularity was growing, and everything from

attending concerts through headsets to wandering through virtual museums seemed more relevant than ever before.

We are now writing this introduction in the early spring of 2022 and the topics covered in these chapters have become even more relevant than we could have imagined. In October 2021, Facebook announced they were rebranding as "Meta," which is the new name for their umbrella corporation (similar to Alphabet as the umbrella company for Google and its offshoots). This major announcement followed weeks of negative press about Facebook, which included evidence of the role Facebook groups played in organizing the January 6th uprising in Washington, DC, alongside whistle-blower revelations that Facebook knowingly uses algorithms on Instagram that are detrimental to users' mental health (mainly to drive ad revenue) (Romo, 2021; Timberg, Dwoskin, and Albergotti, 2021). As a result of the timing, many commentators greeted the major Meta rebranding with scepticism and argued the timing was a cynical attempt to change the public narrative (Fenlon, 2021). However, regardless of the reasons, the Meta rebranding showed that one of the largest companies in the world envisioned a bright future for VR that makes the use cases examined in these chapters even more relevant.

The core of the Meta rebranding was Mark Zuckerberg's belief that the future of digital media will be found in VR and—to a slightly lesser extent—augmented reality (AR). As part of the "launch" event, Zuckerberg announced the company was spending $10 billion in 2021 on building their VR "Metaverse," with similar investments in coming years (Kastrenakes and Heath, 2021). He also announced they were hiring thousands of additional employees to build their VR platforms. And what was maybe most astonishing—and arguably alarming—about the announcement event was the *scope* of the vision for the future of VR. The Meta home page has videos touting the use of VR for everything from exercise to education to entertainment. Zuckerberg himself hyped the supposed "Metaverse" as the "next evolution in social connection" (Meta, 2021, n.p.).

Equally importantly, Meta was far from the only company announcing interest in VR. Companies ranging from Roblox to Sony to Microsoft also announced interest in building a supposed Metaverse, and VR is central to much of that vision. At this point, there's no clear outline of just what a Metaverse would look like and no way of knowing which companies would succeed in building a Metaverse. And honestly, we are not sure that it matters all that much for the future of VR and particularly for the relevance of the chapters in this collection. While the term "Metaverse" may end up being a buzzword people forget about within a few years, the investment in VR will still help the media form grow in ways these chapters document in detail.

The chapters in this book were mostly written before Meta's massive investment in VR and companies ranging from Roblox to Microsoft's announcements

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