DEEP DIVE

ART AND VIRTUAL REALITY

HTC Vive virtual-reality headset, 2017.

VIRTUAL REALITY IS NEW AGAIN. In the 1980s, when the term was first coined, VR epitomized the cumbrous simulacra of the era: All Max Headroom stutter and cyberpunk goggles, it was an apparent culmination of the long fantasy of living in total illusion, a history spanning phantasmagoria to the Circarama, holographic video, surround sound, dome theaters, and experience machines. Over the past decade, the technology—and the dream— has returned in full force. And if the headsets still seem clunky, the engineering for producing and viewing VR is undergoing rapid new developments, portending a near future in which fully immersive and interactive virtual experiences are as common as real ones. But as tech evangelists trumpet an imminent explosion in accessibility, artists are exploring the contours of these responsive environments—and finding darker scenarios, too. For a special set of features, *Artforum* invited thinkers and artists at the forefront of VR—DOUGLAS COUPLAND, DANIEL BIRNBAUM, JORDAN WOLFSON, RINDON JOHNSON, SARAH MEYOHAS, RACHEL ROSSIN, JON RAFMAN, AND ALYSSA LOH—to examine the technology and the questions it raises about artifice and resemblance, perception and truth, omnipresence and repression, alienation and existence.

Below: **Internal hardware of the Oculus Rift virtual-reality headset, 2017.**

Opposite page: **Olafur Eliasson,** *Rainbow* **(work in progress),** VR video, color, sound, indefinite duration.

WILDEST DREAMS

DOUGLAS COUPLAND TALKS WITH DANIEL BIRNBAUM ABOUT ART AND VIRTUAL REALITY

FROM MUSEUMS TO HOLLYWOOD, visionary artists and filmmakers—Paul McCarthy, Alejandro González Iñárritu, Jeff Koons, and Marina Abramović, to name a few—are taking on ambitious virtual-reality projects. Writer and artist DOUGLAS COUPLAND— who has prognosticated some of the most critical generational shifts of our time—and curator DANIEL BIRNBAUM met to discuss these endeavors and the future of technology and desire.

DANIEL BIRNBAUM: Have you seen anything memorable in VR?
DOUGLAS COUPLAND: Yes . . . it was a beautiful summer evening three years ago. I'd invited a few friends over, and one of them arrived with the most recent Oculus Rift headset. I had two VR experiences. First, I flew over a Cajun swamp in pursuit of purple lights in the
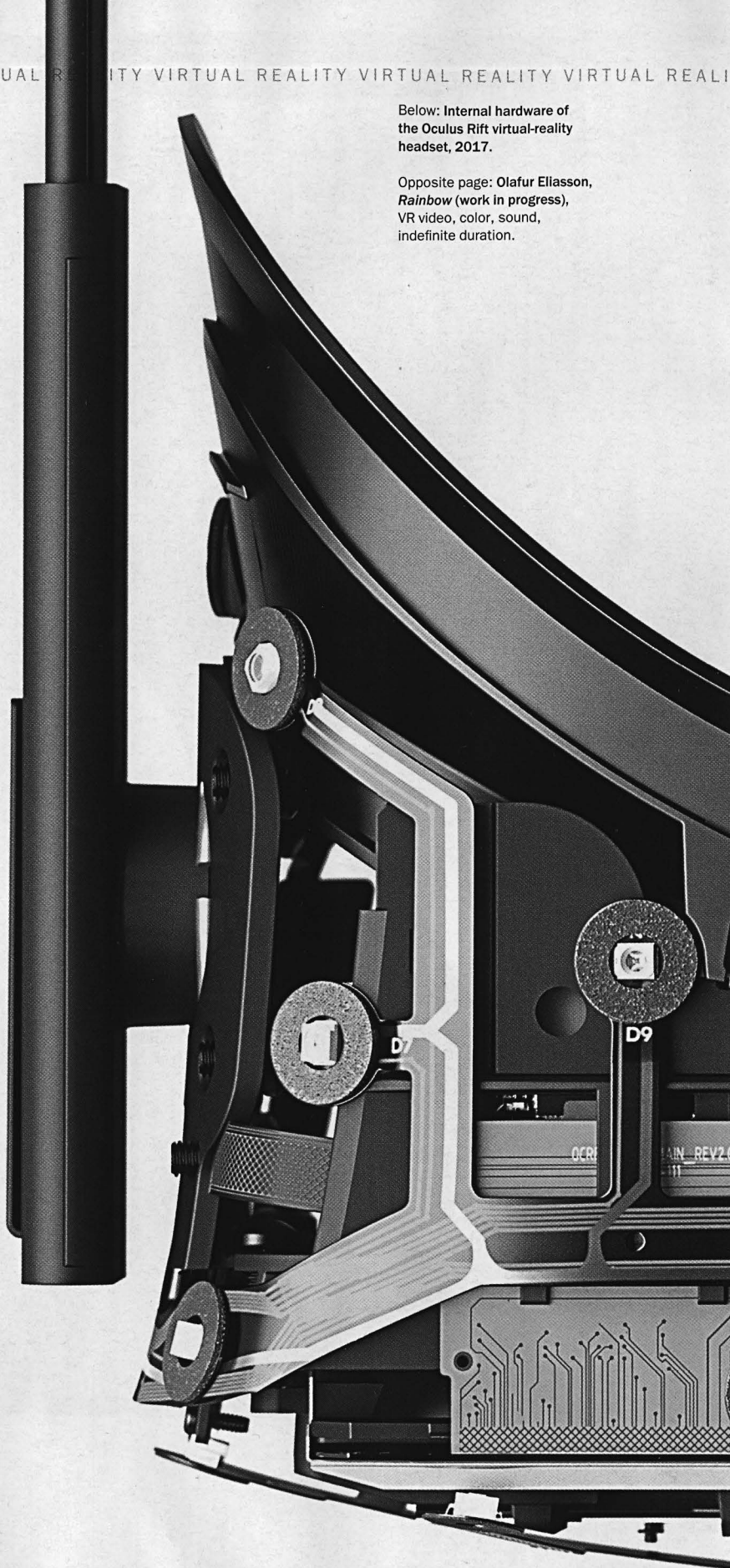
"Reality is toast."
—Douglas Coupland

distance. Then I collected asteroids in the rings of Saturn. No sound.

The twist was that when I removed the goggles, I looked at my favorite room in the world, filled with good friends on that beautiful summer evening, and I thought, *Man, what a dump*.

The thing about VR is that it's so much better than the real world. Reality doesn't even come close—and that shocks me. Assuming the screen quality is good, even a banal VR experience is better than real life.

It also turns out that my alienation is a common reaction: "post-VR sadness," a sense of derealization and depersonalization.

One problem, which is being worked on very hard—and which will soon be solved—is that of dexterity. How do you allow people to make full use of their hands inside their chosen realities? Once that issue is fixed, the rest of the body will similarly be addressed. VR's haptic progression will continue on to Wii-like levels of engagement. This makes me suspect that soon VR and robotics will have to be married, a union that will take us all into scenarios of multilevel creepiness— anything from a Disney princess who dispenses hugs to "Don't worry, online shoppers: It's 100 percent legal to skull-fuck your VR slave!" If people in the real world can get off on a jockstrap or a 1977 magazine ad for Playtex bras, imagine what will happen when your $6,999 Life Scale Fleshjack^PLUS with Improved Pulse Function arrives on the Thursday morning Amazon drone.

I don't think I can overstate the grimness of the real world compared to VR. Reality is toast.

DB: I'm reading your book on Marshall McLuhan [*Extraordinary Canadians: Marshall McLuhan* (2009)] at the moment, and of course I ask myself what he would have had to say about the new medium. For instance, is virtual reality "hot" or "cold"? Hot media, according to McLuhan, engage one sense completely and require minimal participation from the user. Radio and film, for example, are hot.

They command the whole sensory field, with no gaps, as it were; when you listen to the radio you hear nothing else, and when you watch a movie you see nothing else. You don't have to work as hard at immersing yourself. By contrast, TV and comics are cold media. The audience is asked to fill in the gaps themselves, which demands not only more concentration but also heavier reliance on prior understanding of the medium's conventions. I'm not quite sure I've ever totally understood the distinction, but my question to you, the McLuhan aficionado, is whether VR as it has developed so far is a hot or cold medium.

DC: It's the ultimate hot medium. It hijacks both your reptile brain and your frontal cortex as well as your vestibular system. Once you're in it, you're really in it. It's not like you can check your email or get a snack or answer the doorbell while you're inside VR. You become it; it becomes you.

VR seems like it's the logical end point of a data-bombardment process that started with Gutenberg and accelerated with radio, then TV, then the internet. And now I've come to believe that data is addictive, and our need for it grows the way addicts need bigger and bigger fixes to get high. Our days are largely spent behind screens—with greatly reduced somatic experience—and our memories of the day come from those screens that are fire-hosing data into our brains. We now calibrate our sense of time passing by how much information we absorbed that day. Data is the new time and, by extension, the cloud is the new infinity. And VR is a kind of temporal accelerator. I think VR is as much data as the human brain can handle; we finally know the limit. VR is your brain flying straight up the y asymptote.

To put this in perspective, imagine time-traveling back to 1992. There'd be nothing data-rich enough to engage you. Books? Movies? No. TV? No—you'd be a time hostage to broadcasting schedules. And of course, there'd be no internet, so you'd sit in a chair feeling queasy and decompressed, like that creepy feeling

like they've been cocooned by a superior species. It's hard to look at people experiencing VR without thinking their soul has been stolen by someone else. Whoever figures out how to make sets that look like sexy 1970s ski goggles is going to win the 2019 Nobel Prize for product design. What interests me here is that people are viscerally turned off by the sight of Oculus sets being worn and used—"I can't let myself become . . . one of *those*." And yet, once they're hooked, it doesn't matter what they look like: Users will demand the experience.

DB: Do you think the headsets can ever be reduced to something as discreet as Ray-Bans or even contact lenses?

DC: That's a good question. I doubt immersion is possible with mere glasses. Glasses are much better with augmented reality (that is, integrating text and digital imagery into the user's field of vision), which is, according to my tech friends, much closer to mass explosion than VR. But Google Glass really spooked people. They won't be rereleasing them until they're perfect.

Let me ask you something. Conrad wrote that "We live as we dream—alone," which I have always thought to be one of the most hauntingly lovely sentences ever written. Do you think VR is returning us to an almost amniotic dream state?

DB: One of the limitations of VR as a medium for art, it seems to me, is exactly this solipsistic quality, the fact that you go into a state of fundamental solitude. This masturbatory aspect really doesn't appeal to me, since I like to share the experience of art with others. Isn't that actually the charm of the art world and of exhibitions especially—their intersubjective and communal qualities?

DC: Literature is intensely private as well. I don't see anything wrong with creating universes for people to get lost in. But would you go to a museum to read a book on a wall along with dozens of other people? Or would you phone a friend and say, "Let's go online together"? It's almost as if we need to invent some form of spectrum along which mediums can be calibrated against their tendencies to isolate.

DB: We walk through a museum to look at things together, to agree and disagree. In that sense, museums are part of public life and fundamental to critical dialogue, but also to all kinds of new encounters and interactions—including flirtation. All of this, it seems to me, is missing the moment you get lost in that amniotic dream state behind the VR goggles.

DC: Maybe so, but I'm not sure there's going to be much room for these kinds of considerations during VR's first wave. I spent (for reasons too complex to explain here) all of yesterday socializing with a group of hedge-fund people out of New York, and two of them are actively investing in VR that incorporates violence, dexterity, and haptic responses. I think this might spotlight just what we can expect as the technology develops. It's not going to be a high-road kind of thing. But then, enter Olafur Eliasson. . . .

DB: Apparently you can make appointments with friends in virtual space. Eliasson's new VR piece, *Rainbow* [all VR videos cited are works in progress], centers around this possibility. You enter an area that contains a rainbow produced by light passing through drops of rain, almost a fine mist. You can interact with this subtle waterfall, and you can share the experience with others who have been invited into the space and who appear as avatars. I'm not sure how many people the work can accommodate; I think about eight. Which, by the way, is also the right number for a great dinner party.

DC: I don't think people need or want certain experiences to be like a dinner party. People online enjoy playing games with others—Scrabble or first-person fighting, say—but they prefer to do it with people they *don't know*. It's enjoyable and freeing to play a word game with someone who, for all you know, is in Dunedin, New Zealand. I think VR is going to be like that, too. Using VR with people you know will be like having a party when you're a teenager and your parents come in and dance.
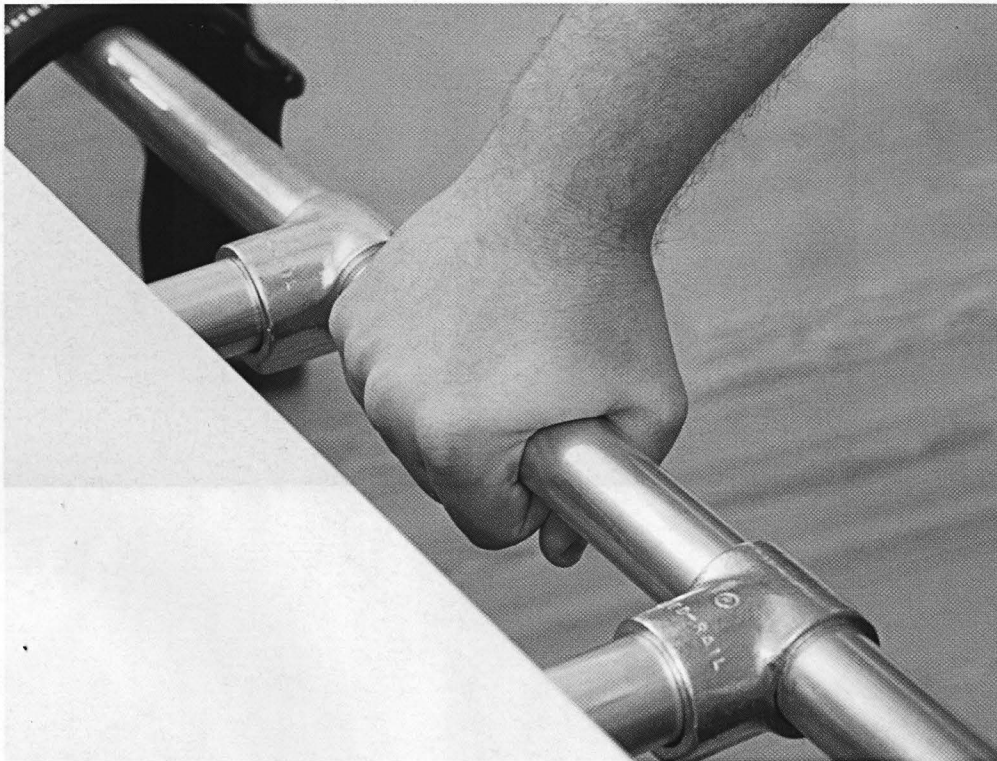
you get when you have no Wi-Fi.

DB: Some people seem to think that VR, when fully established, will change the way we inhabit this planet—the way we live, work, and communicate with one another.

DC: Utterly.

DB: Do you think it is a bit like the introduction of TV? Or more like the invention of electricity?

DC: Electricity. Life without VR will be intolerable. Especially on a sexual level, and on the level of providing dense fight-or-flight experiences. Porn and gaming, basically. Those two categories are where technologists expect the financial Klondike to begin, just as it did with the internet.

DB: Do you think the medium will give rise to a new kind of art?

DC: I hope so. Also, remember that when a new technology triumphs, it allows the technology it's rendered obsolete to become an art form. That's what happened with the internet. It allowed TV to finally make art. Therefore the next step is for the rise of VR to allow a golden age of internet art, like the golden age of television that started in the early 2000s.

When TV first came out, everyone's first idea was to use it for puppet shows. So I think at first there'll be a lot of echoing of other art forms until the medium finds its legs.

DB: Will all disciplines reappear as simulations in virtual space and double everything we have ever considered art, regardless of genre?

DC: That would be exciting, and I think it's a large part of what will evolve. Also, remember that VR is really harsh on the vestibular system and the reptile cortex. Many people puke during or after VR. So it has intrinsic somatic properties just waiting to be overcome—but also fleshed out and exploited.

DB: The question of intrinsic properties is an interesting one—VR might seem like the ultimate post-medium medium, and yet the effects you're referring to are unique,

insofar as they act directly on kinesthesis and equilibrium in a way that no other medium does. And VR is immersive, whereas all the medium-specific definitions of media associate one medium with one sense—music with hearing, painting with vision. We could think about these issues in terms of a *longue durée*: The idea that a work of art must adhere to the specific characteristics of its own medium is much older than Clement Greenberg's emphasis on painterly flatness—it is already present in the writings of Gotthold Ephraim Lessing in the late eighteenth century. Obviously, art produced in VR will be totally different from literary, painterly, or sculptural work in the traditional sense, but there are already attempts to define the transcendental conditions of possibility for works unfolding in the spaces opened up by the new technology.

DC: Yes, and it's also terra incognita, and everyone wants to get there first. At the moment there are people doing 3-D VR paintings, but they seem to be somewhat sentimental rehashings of nineteenth-century notions of what painting is. It's like art you buy at the art store in a Las Vegas casino mall.

DB: All phenomena emerging in VR are immersive, interactive, and digitally generated, says David J. Chalmers in his essay "The Virtual and the Real." Does that already delineate a critical framework for a future theorist with Greenbergian ambitions?

DC: We're discussing a new technology that has no ontological precedent, the way search had no precedent. I think VR maybe needs to be alive for a little while before we begin limiting it in advance, and then getting angry or defensive if it defies initial predictions. Ultimately, VR may not be able to become an art form until some new technology obsolesces it in 2034.

DB: Do you find VR unappealing because people wearing the goggles look so unsexy?

DC: Google glasses made people look like assholes. VR goggles make people look

"At some point, the question becomes: Why should we remain human? Why would the prosthetic bodies constructed in virtual space limit themselves to our human parameters?" —Daniel Birnbaum

DB: I'm thinking of the philosophy of deep solitude and its limits. From a phenomenological point of view, VR offers some theoretical conundrums. In [Edmund] Husserl's late work, for instance, the successive reduction of intersubjective experience, the stripping away of otherness, leaves a primordial sphere in which nothing is given except the incarnated subject's experience of its own living presence.

DC: It's like the star child hovering over earth at the end of *2001: A Space Odyssey*.

DB: But then, according to Husserl, there is some sort of dynamism in this autistic world that pushes the monadic subject beyond itself and permits the appearance of other bodies, which signifies the presence of other living beings.

DC: I guess we're discussing immanence, and how that would manifest itself within VR environments. I think VR will actually be very good at this—probably too good. Imagine if every moment could feel like Christmas morning. Wouldn't that be the place you'd want to be? McLuhan had that, by the way—a sense of perpetual immanence. I'm jealous of that.

DB: On the deepest level, subjectivity is not only vision. It is also bodily awareness and kinesthetic experience, a theme that Maurice Merleau-Ponty developed into a phenomenology of finite subjectivity as irreducibly visceral. In VR we can already hear and see and touch. Will we experience smell and taste in the future?

DC: I doubt it—at least not in the next few decades. The underlying science just doesn't exist.

DB: AT SOME POINT, the question becomes: Why should we remain human? Why would the prosthetic bodies constructed in virtual space limit themselves to our human parameters? Will we be reborn as star children, as godlike creatures?

DC: Maybe gods like those in the Greek pantheon—beings as driven to seek pleasure and excitement as mortals, but with every source of gratification at their fingertips. Think: porn. Think: violence. Think: flight simulation. Think: extreme sports.

DB: One more comment about the sense of solitude that VR experiences create: Even when you take off the headset, the solipsistic suspicion remains, and all the demons of radical skepticism keep whispering in your ears about maya and butterflies dreaming that they are awake. One night Zhuangzi, a Chinese philosopher in the late fourth century BCE, dreamed that he was a cheerful butterfly. After he woke up, he pondered how he could resolve whether he was Zhuangzi who had just finished dreaming he was a butterfly, or a butterfly who had just started dreaming he was Zhuangzi, the philosopher. Similar forms of doubt can be found in ancient Vedic writings about the concept of maya, or illusion, not to mention innumerable versions of radical skepticism in Western thought, all the way up to the idea of posthuman civilizations that are running ancestor simulations. Are you really sure you're awake? In fact, VR seems already to have given rise to a new generation of philosophy students who believe they live in a simulation. And they haven't even read Jean Baudrillard, only Nick Bostrom's simulation argument.

DC: That's the future of solipsism: In VR, you inhabit a world that was created solely to test and tinker with *you*, the only person or thing in the universe that actually matters. I think everyone goes through a solipsism phase in their early teens and then, for most of us, it goes away. VR is the new ultimate masturbation, except in VR you can't tell when your mom or dad enters your bedroom without knocking.

Daniel, I'm curious as to why VR is suddenly on your radar. You're involved in projects with Marina Abramović and Jeff Koons, in addition to Eliasson.

DB: Yes—the only reason I am aware of these developments is that I was asked to propose artists to work with a VR studio in London called Acute Art. But this past year has been like when you look up the meaning of a word that you had never seen before, and then the following day you see the word again and suddenly it's everywhere. There are a number of artists involved with this technology. The fact that

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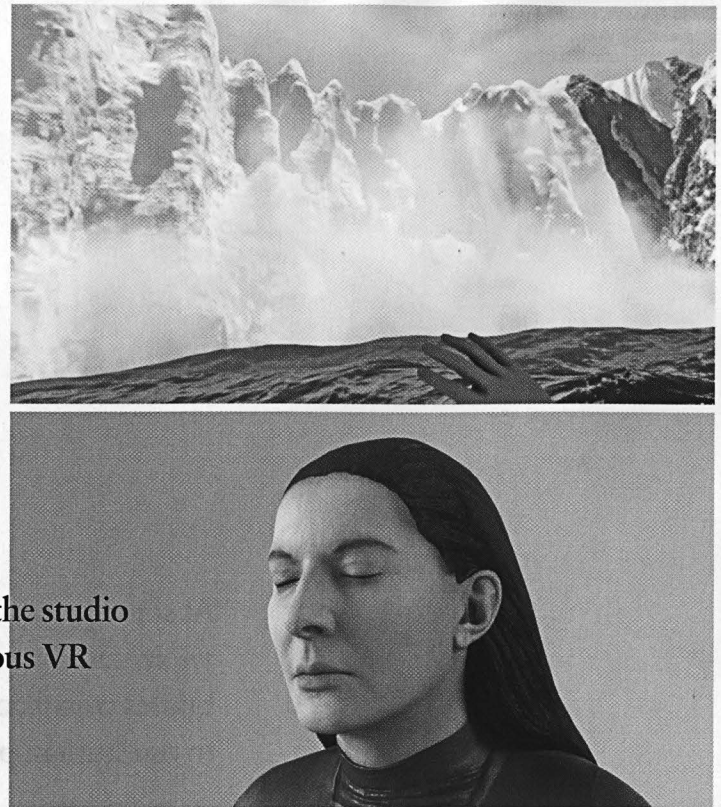
such a large and diverse group are all curious and more than willing to experiment with VR seems to indicate that this really will be a revolution—as opposed to, say, holograms, which were used to great effect by Simone Forti and a few others, but were essentially a flash in the pan. I am an old-school person; I feel at home in the world of galleries, museums, art academies, not at TED talks. But as you say, VR is happening on a massive scale. And I suspect that it will turn out to be disruptive in a way most people have not yet grasped. It might change how we think about art and its institutions. The moment VR goes mobile and anyone with a smartphone can view works of art not as JPEGs but as objects sharing the same (virtual) space with the viewer, the role of the museum will change, and so will the role of the commercial gallery, which might look as obsolete as a record store.

DC: We all have platform fatigue or tech fatigue, and we all know that for the rest of our lives we're going to have endless new technologies thrown at us every five months, and VR just happens to be the next extinction-causing jumbo asteroid we can see careening toward earth in the very near future. That's not utopian. It's a kind of prison.

As far as obsolescence goes, e-books might offer a useful comparison. When they first came out, the entire publishing industry was shitting its pants for eight years. E-books didn't kill books, and they're still only truly popular for airport books—but it was eight years of the same kind of bet-hedging, second-guessing and doomsaying that I'm seeing around VR. I suspect VR will find niches to which it is perfectly suited: sex, gaming, music, fantasy, horror. Gallery art may escape quite easily.

DB: Presuming it does escape, galleries will need to figure out their relationship to the new medium. To present VR works in a gallery and to try to sell them in an edition of five, say, can only be a transitory phase that does not utilize the potential of the medium.

DC: We're right back to people in 1948 wanting to use TV to put on puppet shows. An "edition of five" experience sold by dealers will miss the point of VR, which is its status as a quintessential mass medium, universally accessible.

DB: The power of the medium really is that it can, and should, reach millions. Art for all, as Gilbert & George would say.

DC: I think that while everyone in the entertainment industry and museum system is trying to create a happy, joyous VR experience, it's the younger kids who are going to create VR experiences to make you puke not from disequilibrium but from disgust, or to fuck with your mind as badly as it possibly can be fucked with. Imagine a VR slasher film—it's going to happen. You know it is. When? Where? And how scary will it be? Again, for people just joining this discussion, VR is better than reality.

DB: If Walter Benjamin claimed that that which withered was the aura, what is it that we gain, and what withers, once immersive digital artworks become the standard for aesthetic experience?

Rereading that most cited of essays on art in the age of reproduction, I came across passages that struck me as relevant for what we are talking about. The first is the Paul Valéry epigraph: "We must expect great innovations to transform the entire technique of the arts, thereby affecting artistic innovation itself and perhaps even bringing about an amazing change in our very notion of art."

It is not only a question of access and distribution, but the very ontology of the artwork that is being renegotiated.

DC: If Surrealism happened today it would be over in a week. In the twentieth century you only got one major technology shift and maybe two art movements per decade. Now we get ten new technologies a year and fifty memes a day. Culture is moving on a logarithmic curve along with technology. The pace of change is not linear, and it's foolish to think it is.

DB: Perhaps the entire perceptual apparatus will be altered in the course of this high-speed evolution, and being totally immersed in artificial worlds will feel not only better than real life but more normal, more comfortable.

DC: Yes, and the drive to get back to that immersive world will be relentless. I remember as a child being told not to watch so much TV and go out in the fresh air, but TV was TV and I had to watch it. I couldn't *not* watch it. Last night I was having dinner at a friend's place and the kids were behaving so well, and I complimented my friends and they said, "They have to—otherwise I won't give them the new Wi-Fi password." For the first time in history, parents have a fail-safe blackmail tactic—until the kids run away from home and enter the matrix, never to return. People will get what they know they want. It's the boring capitalist side of things. Friends who work in optical-fiber technology sigh when I ask them how they think their work is changing the world. Only one friend was honest enough to say, "I come to work for forty hours a week so that people can have a satisfying pornographic experience price-pointed at $29.95 or less."

DB: So is art still going to be something people want? My initial reaction after leaving the studio in London where I first encountered ambitious VR artworks was: *We are fucked.*

DC: I told you.

DB: AT THE SAME TIME, some pretty exciting things are going on. Do you want me to describe Jeff's and Marina's works?

DC: Yes.

DB: In Jeff's work [*Phryne*] you encounter a shiny metallic ballerina in a lavish garden. And you immediately have the strong feeling that she is aware of you. She dances for you. And if you come close enough to touch her you somehow enter her world, pierce the membrane of her skin, beyond which seems to be yet another garden, inside her. The ballerina is smart and definitely wants to communicate with you. But the piece is still a prototype. That's the case with Marina's work, too [*Rising*]. It centers around—surprise!—Marina herself, or rather, a perfect avatar of her. She's locked into an aquarium that seems to fill up so rapidly that she will drown any minute, but if you come close and reach out to touch her hands, the glass shatters and you are catapulted to the Arctic, where glaciers are melting and you have to tread on treacherous ice. You are soon given the double task of saving Marina and saving the world from ecological disaster. And the real Marina will use an app to check that you are doing your homework. This is certainly not an escapist piece.

So there's a lot of potential here for engagement as well as for escapism. And yet I have to wonder about a society in which this kind of immersion is as routine as using social media is to us now. What the hell is going to happen to the minds of kids who grow up with this? I know this sounds ridiculous and reactionary or whatever, but really—what is going to happen to our minds?

DC: It's pretty reasonable to ask. VR is probably the most cosmic shift to the human psyche since movable type and printing—except you don't need to know how to read to use VR, and you don't have to speak a language. It requires no training and melts you into it—and, again, it is better than real life.

I'm unsure whether the leap into VR is catalyzed by the fact that humans have maybe done all they can with the real world and the only way out is in—that sounds like a cheesy movie ad, but do you know what I mean? Asad Raza and Shumon Basar and I are ping-ponging ideas around right now, and I was wondering, What would post-Enlightenment art look like? and I think VR is the answer. It's not just nonutopian, it's a negation of progress. It's like, Fuck it—I'm

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out of here. Fight religion with drones, but I'm going satellite mining in the rings of Saturn.

DB: I don't know if you know the Swedish mystic Hilma af Klint, a woman who certainly would have agreed that the only way *out* is *in* and who, in the past couple of years, has become a total hit across Europe and definitely comes across as post-Enlightenment, although it's less about negation than about moving beyond the limitations of rationalism. She's almost too good to be true. She painted in secret for decades, producing hundreds of esoteric pictures for a temple that was never built but would have looked a bit like Frank Lloyd Wright's Guggenheim spiral. The other day I had dinner with af Klint's grandnephew, who is almost eighty years old, and we started to talk about VR. We agreed that af Klint's temple paintings don't need a physical building, and that actually she had anticipated this new medium and was dreaming of new dimensions that now, a century later, are emerging as real technological possibilities. Perhaps we'll see a new kind of mysticism. Is that what you think?

DC: Mysticism in art is hard to pull off. As time goes by, though, I'm wondering if the core issue surrounding artmaking is finding ways of creating immanence without being corny or naff or a long list of adjectives. It also seems to me, Daniel, that you went from being very skeptical to being very convinced in a very short period of time. What makes you think it will be hard for art-world people to get on the VR train? Will it just be older art-world types sighing and thinking, Fuck. Another paradigm shift, and I'm fifty-five. I just want to move to the desert and chase waterfalls in my Tesla?

DB: It's definitely to do with a well-established critique of technology. There have been moments of great techno-optimism in art, from Futurism around 1910 to Group Zero and Experiments in Art and Technology in the postwar era, not to mention innovative projects like [Jean-François] Lyotard's "*Les Immatériaux*" exhibition [1985] and, of course, Net art.

But I would still say that your remarks about the necessity of obsolescence are closer to the attitude that has dominated artistic practice and critical writing for decades.

DC: All technologies are transitional technologies. We joke about CD-ROMs and 8-track, but even something like the printing press was just a transitional technology to get us to peak digitality—and VR is this thing that renders absolutely everything obsolete. It's spooky that way.

DB: There are of course exceptions, but, generally, naively utilized digital technologies appear to be too closely linked to commercialism and the entertainment industry.

DC: Yes and no. The commercial gallery system seems to love glitch art, but entertainment technology has driven animation to profoundly complex levels. It turns out that the depiction of convincing-looking hair—so banal—is what drove the ongoing push for lifelike digital clarity.

DB: The artist Ed Atkins makes a point of unconvincing-looking hair, among other tactics geared toward undercutting the lifelike quality of digital animation. That's one way of resisting or protesting the march of technological innovation.

Rosalind Krauss famously proposed the deployment of obsolete devices amid the most developed forms of visual and spatial domination, in the hopes of creating something Benjamin H. D. Buchloh refers to as "allegorical counterforce."

DC: Aura. Dirt. Puerility. The smell of lube and the scent of decaying flesh. I'm thinking of everyone in LA wanting to be Thomas Houseago's best friend while daydreaming of pilfering pieces of filthy leftover chunks of wood and steel

from the studio floor when he's not looking. And that's actually a healthy thing.

DB: In "Control, by Design," an essay in the September 2001 issue of *Artforum*, Buchloh talks about an "invincible spell and hermetic closure" that the language of media technology established in the service of spectacle and commodity production.
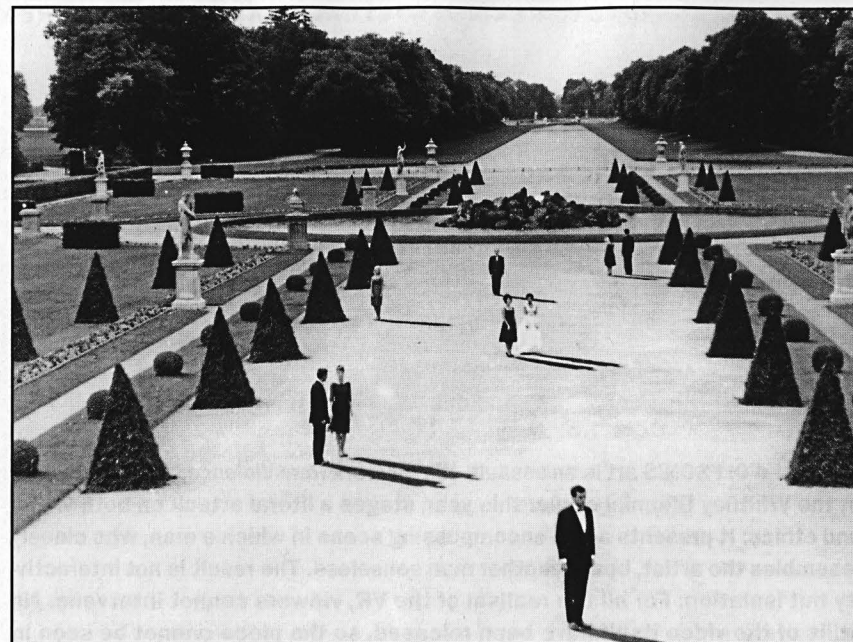
DC: For me, the ultimate embodiment of that is Disney animation, in which every frame is constructed within the Disney regime, and where every single experience generated is ruthlessly efficient and based on extracting the greatest amount of affect from the greatest number of people. It's Nutella. I think the "invincible spell and hermetic closure" is killing most film, too. Film now has to compete with long-form TV. Every film frame, as in Disney animation, has to be ruthlessly efficient.

DB: Art's role, Buchloh would insist, is not to join the forces of ruthless efficiency and four-quadrant marketing but to create zones of resistance, and I would agree that obsolescence has offered more than affirmative techno-optimism. So I guess that even if we agree that VR is happening and is indeed inevitable, the question still is: Will we see a critical mass of important art that takes advantage of the possibilities, a meaningful counterweight to monetized escapism?

What interests me most is whether there is something necessarily unrealized in the designs and visions of today's most interesting artists that needs the new technological possibilities to crystallize.

DC: Absolutely. But what if they make something uninteresting? Or maybe the real issue is that we all know what it's like to get home at the end of the day and need a drink. Is VR the permanent answer to this?

DB: A drink, yes. But it has more to offer, no? A more extreme form of distraction. Perhaps like Surrealism, science fiction, or LSD. In his 1938 book *The Theater and*

Its Double, Antonin Artaud speaks of the theater as "*la réalité virtuelle*," something that is always mentioned when the prehistory of VR is discussed. But there are even more relevant precursors. Mark Leckey, when I asked him if he could imagine creating something for the medium, reminded me of Argentinian novelist Adolfo Bioy Casares, Jorge Luis Borges's friend, who wrote *The Invention of Morel* [1940]. It's a kind of science-fiction novel in which a fugitive is hiding out alone on an island. He discovers that the island is miraculously filled with glamorous people who swim in a pool and dance, as if they were visiting a summer resort like Marienbad.

It turns out that a mad scientist, Morel, has created a diabolical holographic recording machine that captures all of the senses in three dimensions. It's a satanic device because it destroys its subjects in the recording process, rotting the skin and flesh off their bones. The fact that Marienbad is mentioned has been taken as proof that Alain Resnais's *Last Year at Marienbad* [1961] is actually based on this Argentinian fantasy, and that one must understand that the protagonists in Resnais's classic are actually holographs inhabiting a virtual maze, otherwise the film's plot remains incomprehensible.

DC: I love that movie. I've seen it maybe ten times. I laid out my Japanese garden based on the still of the actors standing in the plaza before the hotel. And now the (non)narrative suddenly makes total sense. □

Olafur Eliasson's Rainbow *will debut on Acute Art this month, followed by Marina Abramović's* Rising *in December and Jeff Koons's* Phryne *in February 2018.*

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DOUGLAS COUPLAND IS A WRITER AND ARTIST BASED IN CANADA. (SEE CONTRIBUTORS.)

JORDAN WOLFSON

JORDAN WOLFSON'S art is an assault. His VR work *Real Violence*, 2017, exhibited at the Whitney Biennial earlier this year, stages a literal attack on both vision and ethics: It presents an all-encompassing scene in which a man, who closely resembles the artist, beats another man senseless. The result is not interactivity but isolation: For all the realism of the VR, viewers cannot intervene. No stills of the video itself have been released, so the piece cannot be seen in reproduction, as if it is a traumatic blind spot. The work pushes the hermeticism of the VR experience into a terrifying obliteration of both self and other—and yet, in doing so, creates an aesthetic experience that challenges technological control. Here, as he prepares to work on future VR projects, Wolfson talks to *Artforum* editor Michelle Kuo about illusion, experience, violence, and art.

MICHELLE KUO: *Real Violence* is the first piece you've made in VR—which, right now, is generally still a high-tech and highly elaborate process. You work with a production team, and specialized equipment and software, and you ultimately create something for a headset that so far isn't a mass-consumer device—it isn't in everyone's hands, like a phone. How did you approach the making of the piece and the immersive experience—the "realism"—of the technology itself?

JORDAN WOLFSON: I think that if you look at VR for what it is, it's uninteresting as art. I don't actually think VR is a compelling art medium.

So in *Real Violence*, I tried to negate all the given qualities of VR. The original idea for the work was that you were in a nondescript parking lot, and you walked into a scenario where a group of people began assaulting you, and the longer they assaulted you, the more interactivity you would lose through the headset. So you were actually the victim. The more you were beaten up, the less you could hypothetically react and, by VR definition, "look around."

Then I looked at a lot of point-of-view material and realized that the concept just wasn't good enough; it didn't work. I was talking about it with Patrick Milling Smith, the head of the production company I was working with, and we started thinking about the idea of *witnessing* violence as a third party: It seems like we are always in that position anyway. We're exposed to so much violence; if not first-hand, in real life, then through the internet or the television or movie screen.

Starting at that position, as a passive witness, was interesting to me, especially since VR is almost the opposite: It gives you an opportunity to be active in an environment and to have an "experience" where you can look around and interact with things.

MK: It's totalizing, it demands your entire attention.

JW: Yes, but that's the problem. . . . I believe in Marshall McLuhan's distinction of "hot," or interactive, media versus "cold," or non-interactive, media—and that VR is hot. So I wondered, How do I take this hot medium and then cool it down? The interactivity of VR, for me, hindered what you would call the art experience. So the challenge was how to *drain* the interactivity, or concentrically remove it from the piece.

That's why, when you put on the headset, there's a countdown without head tracking, followed by an initial rotation of perspective, giving viewers a very short—if not too short—span of time to reorient themselves before the violence occurs. It's like half a beat, and then violence. You experience this physical distortion that places you at a remove, puts you in a passive role.

You're also witnessing the violence without any context. There's no audio contextualization, and the violence occurs immediately, denying the chance for any narrative to develop.

MK: What is the significance of the soundtrack—a Hebrew prayer being sung over and over, in an almost drone-like way?

JW: The Hanukkah prayer was something warm and deeply familiar to me from my childhood. But since I'm not religious—and find religion absurd, actually— the song felt like a novel element. Combining it with the violence was actually a purely intuitive decision, but it ended up creating an intense charge of pure difference. The content of the prayer is evacuated; it becomes odd, almost absurd, and misplaced. And, like the imagery, the chant cuts out early—which suggests to the viewer that the prayer itself, its subject matter, any references to Judaism, are in fact completely unimportant. Instead, the work's meaning comes from form: the cut, the cadence, the rotation, the silence. I wanted to drain all reference. It becomes a kind of body sculpture: You put on the headset and your body is the vessel that activates and carries the work—because of the fact that VR is a completely internalized experience.

Separately, there's also the situation of observing other people experiencing the work—being there, putting on a headset when someone else is putting on a headset, taking off a headset while someone else is taking off a headset, or about to start the piece or in it, or seeing people standing at the table and waiting in line, etc.

MK: And the museum provides another environment within which the work is nested.

JW: What was so great about the Whitney [installation of *Real Violence*] was that it was so crowded, and then suddenly you were alone, on the virtual street, so the work is basically transferring the person between these phases.

And then . . . the piece ends abruptly. It's not a loop, it's not intended to be watched again and again. Here, it just goes black, accompanied by static noise, and then you remove the headset and suddenly you're in this museum and there's people around and you're in a city and there's natural light and a view and artwork. It's like Roland Barthes's idea of when the movie ends and you exit the theater.

It's another way of making the viewer passive and disoriented, as if they were in a vehicle that suddenly stops. I always wanted the moment when you're returned to the real world to be the third act of the piece.

MK: It's like the opposite of the VR gaming experience, which is all about forward momentum or narrative propulsion.

Museum visitors watching Jordan Wolfson's *Real Violence*, 2017, Whitney Museum of American Art, New York, June 20, 2017. Photo: Dan Bradica.

JW: Yes. The production team I was working with was definitely into movies, narrative. They would say, "Oh, maybe someone should walk through the scene, that would make an interesting narrative," things like that. But we wound up removing any narrative, so there's no one interrupting, there's no one else witnessing the violence. There's nothing. It's just devoid, devoid, devoid, devoid.

During the production process, there was some concern or confusion from the people I was working with, because they didn't think I was taking full advantage, quote unquote, of the VR experience. But I think that when you look at a technology, especially a new technology, and you're going to use it in art, you have to make a distinction. The experience of art is different from the experience of gaming, or someone using VR to look at a layout of an apartment or a doctor performing surgery, or looking at pornography. The way you look at art is different from the way you look at the rest of the world. It resets.

MK: Do you think aesthetic experience is always bracketed or framed somehow?

JW: When you see a work that rises above eye level, whether it's a Bernini on its elevated pedestal or Brancusi's *Endless Column*, it forces you to look up—and that also neutralizes the potential for interactivity and compels you to just witness the work from below and afar. It's a body distortion that reorients the way the viewer consciously looks. By simply forcing viewers to cock their heads upward, you take them out of their regular orientation, and the experience of looking magnifies, sound goes mute, the body stops, the mind quiets, and the viewer is in a state of witnessing.

In fact, I had the programmer who built the player for the VR file create an option so that a certain frame in the video could be selected to mark a point where the head tracking turns off, so you couldn't look away from the violence, even if you wanted. This wasn't about freezing the violence; it was the last step of removing interactivity. But I didn't use it—not because I thought it would be too sadistic to the viewer, but because formally it just didn't work. It became sticky and appended this other kind of sensation to looking that I felt was subtractive, rather than adding to the experience. It's hard to explain, but when you're using VR, and the head tracking stops, it suddenly feels artificial—in a thin, almost tinny way.

Instead, what was effective was a panning camera movement, so when you start watching the violence, there's a point where the camera starts panning down, and then the sound cuts and everything becomes silent, and the scene turns upside down. And then it flips right-side up and cuts to black, then pauses—and suddenly you go from the virtual world back to the real world.

MK: And how does the work itself "exist" as an entity out there in the world? As a file, or a thing, or a sculpture?

JW: I like the idea of something being an edition, an art object—as opposed to making this stuff to distribute, like it's Spotify.

When people are using VR as VR, and not going against the grain of the technology, I think it's contrived and just doesn't work. Artists pick up new technologies and mediums all the time and they think, *Oh well, this is it and this is what it does and that's it, and that's why it's good and blah-blah-blah*. They aren't looking for ways around it, they aren't trying to get behind the medium and push through it.

But I like how Bruce Nauman experimented with the video camera—he was turning the camera on its side, at different angles, and then walking at an angle in the room . . . or his corridor pieces. Or think of Vito Acconci, using closed-circuit cameras and then hiding himself and talking through the feed. These are great examples of video becoming sculpture.

Both artists remove interactivity: If Nauman didn't have a delay on the video when you walked into the corridor, you would just see yourself in real time, on a monitor, walking down it; but since he added the delay, he basically negated the interactivity.

MK: Does that effect become desensitizing?

JW: When the piece debuted, I expected there would be pushback, and there was— people said, "This is just more white male violence," or "You don't have permission to do this, because you're white and privileged," or "How can this be art? It's disgusting." But violence is ancient and it's everywhere, and no one can ignore it. It's horrific, but this is what happens in the world, and it is inside each one of us. The work is a simulation, but it's a realistic simulation. It's one more negation—a negation of cinematic violence, which is still so often sanitized, even when it's supposedly hard-core. I spoke to a filmmaker when I was working on this piece, and he said, "You've got to watch [David] Cronenberg's *A History of Violence* [2005] and Tony Kaye's *American History X* [1998], because they'll have someone punch someone and then cut away, or they'll show somebody stomping on someone, but they'll be behind a piece of furniture and slightly obscured."

I looked at this stuff, and I wasn't interested in any of it—I wasn't interested in the suspense or illusion or illustration of violence through editing or telescoping. I was interested in exploring violence—and our primal response to it—as a raw material. But it's not because I like violence. Personally, I am repulsed by violence, and making the piece didn't change that. It didn't desensitize me. I still cannot handle it.

This is an artwork, though, not real life. It's fiction for your body. □

JORDAN WOLFSON IS AN ARTIST BASED IN NEW YORK.

Rindon Johnson, *Away with You*,
2016, mesh jersey fabric,
clothespins, clothesline, six
projectors with VR video projection
(color, sound, 14 minutes).
Installation view, Re: Art Show,
630 Flushing Avenue, Brooklyn, NY,
November 2017.

RINDON JOHNSON

I'M ALL ALONE IN HERE but on display out there, performing for whomever (maybe no one, my dog, my partner, an entire museum). Whatever I imagine is outside is in here, too. There is no boundary between here and there. I can hear the wind—I must be able to feel it, too. I only notice that I am still in my body when my body reminds me I have a body. My ear itches underwater. Was that me or the UI? I get very close to disappearing without any effort. At this point, I am so used to being many bodies I easily become bodiless. (Finally.) Inside, outside. Right here, over there. □

RINDON JOHNSON IS AN ARTIST BASED IN NEW YORK AND BERLIN.

Sarah Meyohas, *Cloud of Petals*, 2017, VR video, color, sound, indefinite duration.
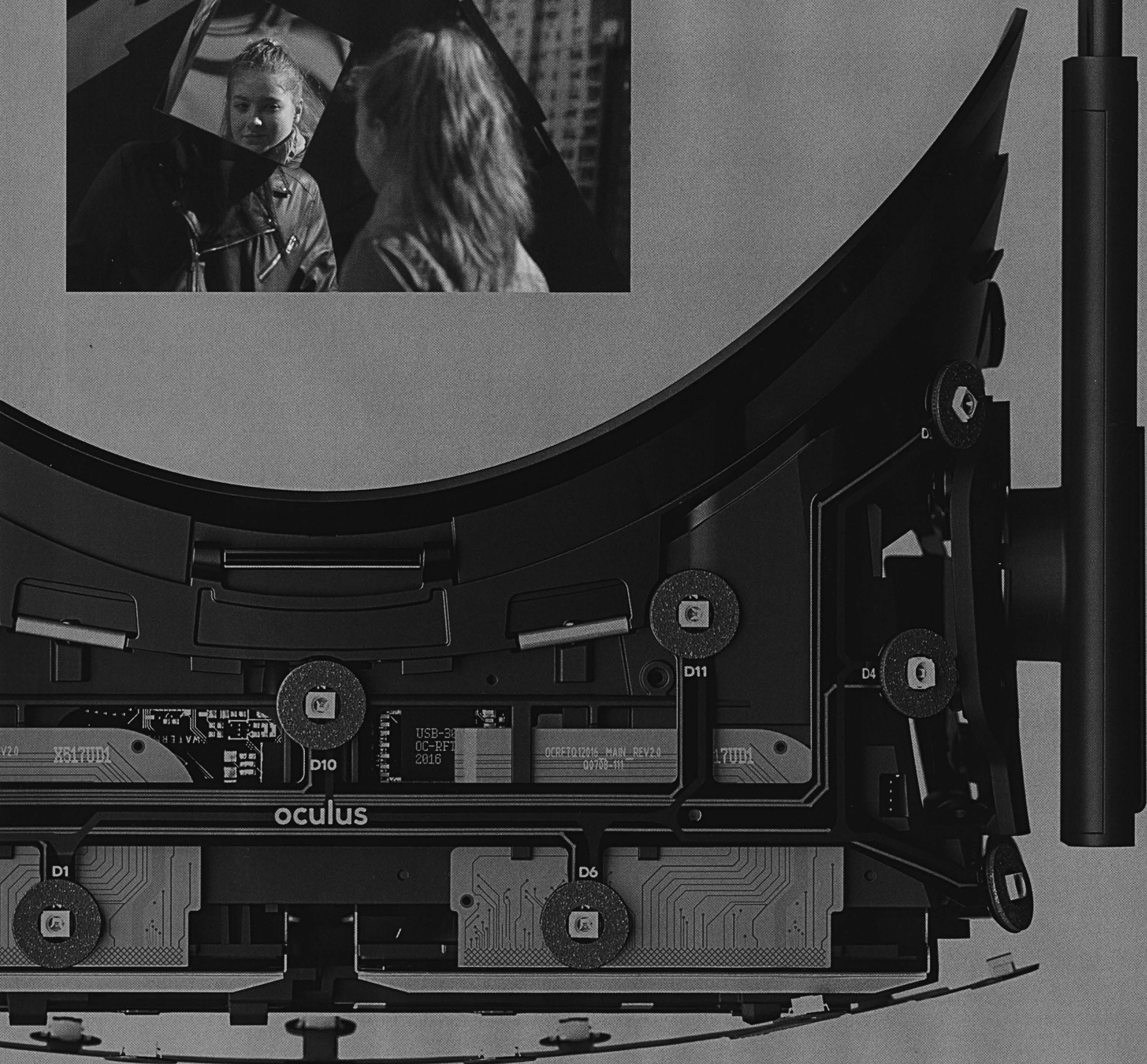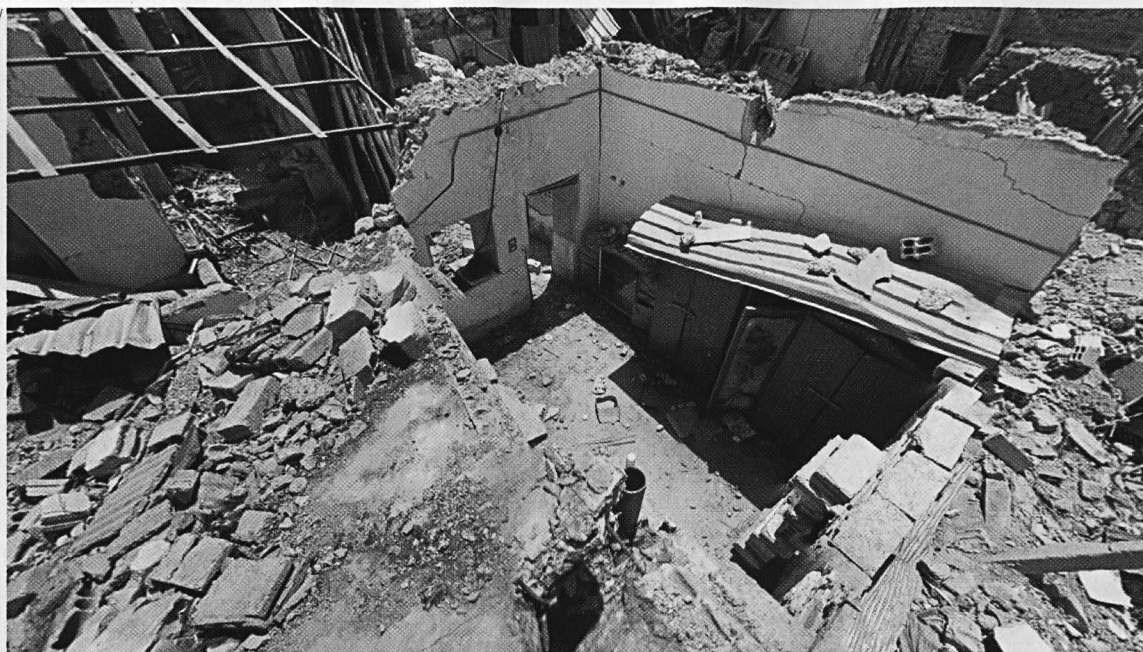
SARAH MEYOHAS

ARCHIVES WIELD GREAT POWER: They shape memory and identity. What is selected, and how is it preserved and used? The current trend of networked data (museums putting their collections online, Google Books) makes content management systems interactive. This is the gamification of the archive.

For my most recent project, I formed my own interactive archive. Sixteen workers photographed a hundred thousand individual rose petals. Next, a machine-learning algorithm generated new, purely digital petals based on this data set. I then worked with producer Tyler Pridgen and developer Nate Turley alongside VR studio Superbright to create a virtual environment in which 3-D models, derived from both the AI-generated and original photographic petals, become particles in simulated systems, floating in space like a cloud.

The current physical state of these systems, in turn, exists only through the agency of a viewer. That is because of the critical difference between a physical artwork and a virtual-reality piece: A physical artwork requires a one-to-one physical confrontation, which anchors subjectivity in the body; in virtual reality, by contrast, the viewer is a point in space, both physically disembodied and embedded in the work. In affording limitless positions and perspectives, a VR simulation is therefore akin to the latent, n-dimensional space from which the AI-generated petals emerged: Every point is a potential image. □

SARAH MEYOHAS IS AN ARTIST BASED IN NEW YORK.

I FEEL YOU

ALYSSA K. LOH ON VIRTUAL REALITY AND EMPATHY

Opposite page, top: **Still from Tribeca Film Festival's 2017 advertisement *See Yourself in Others*, directed by Jared Knecht.**

Opposite page, bottom: **Internal hardware of the Oculus Rift virtual-reality headset, 2017.**

This page: **Amnesty International and Lamba Media Production, *Fear of the Sky*, 2016,** VR video, color, sound, indefinite duration.

IN 2015, filmmaker Chris Milk gave a TED talk where he dubbed virtual reality "the ultimate empathy machine." The idea—and phrase—stuck. Since then, his presentation has racked up nearly a million and a half views. Attend a tech panel, or browse the pages of the *New York Times* or *Wired*, and you will repeatedly encounter the claim of VR's unique power to evoke an empathetic response in viewers. Slip on an Oculus Rift headset, and suddenly you are in a camp in Jordan, observing a family as they eat meager rations in a make-shift tent. Charities such as Amnesty International, the International Rescue Committee, and the Clinton Foundation have incorporated VR experiences like this into fund-raising efforts. A persistent stream of films seeking to "raise awareness" dominates the VR landscape, rendering scenes from a Syrian refugee camp, a bombing in Aleppo, or the death of Trayvon Martin in 360 degrees. They promise to help you empathize—quickly—with their various subjects.

But from the beginning, VR's champions have posited an odd conception of empathy. Milk opens his talk by professing his childhood love for extreme stuntman Evel Knievel, for whom he says he had "so much empathy"—though it seems Milk actually means he enjoyed imagining that he *was* Knievel. In other words, Milk's first example of empathy consists not of an encounter with another subject so much as the replacing of that other with himself. This dubious understanding of empathy only becomes more evident as Milk describes the projects he undertook on his self-described quest to "build the ultimate empathy machine." Those endeavors culminated in *The Treachery of Sanctuary*, 2012, where viewers could stand before an interactive animation of their own silhouettes digitally accoutred with wings that responded to the movement of their arms. "So now I've got you inside of the frame," Milk explains, "and I saw people having even more visceral emotional reactions to this work than the previous one." Sure. But is it a triumph of empathy to demonstrate that we are merely interested in ourselves? Do we have empathy for our own reflection in the mirror?

Remarkably, this was precisely the conception of empathy celebrated in this year's ad campaign for New York's Tribeca Film Festival, which boasted a number of VR works in its program. In the festival's much-circulated promotional video, people—especially from minority demographics, e.g., an African American boy, a Muslim, a drag queen—walk the streets of New York while wearing mirrored boxes over their heads; passersby turning to look at the performers see their own faces reflected back. The clip concludes with the command that you SEE YOURSELF IN OTHERS. But what has it actually shown? A way to see ourselves *instead of* others—to replace someone else's face with our own. A more apt image for this deep (and culturally symptomatic) misunderstanding of empathy can scarcely be imagined.

In VR, your environment may seem to change, but your mind remains your own. Your will and command over your person, your freedom of control over the direction of your gaze—these are what the medium protects and extends. Compared to other means of storytelling, it thus affords much *less* access to the inner lives of strangers. Only a profound, even dangerous misconception of empathy could produce the claim that VR is uniquely suited to fostering it. We are shown an ad in which a well-heeled woman in a business suit glimpses her own reflection where a homeless man's face should be, and we are asked to interpret this as an empathetic brush with the inner life of the other. Literature's central insight—that we are capable of understanding each other—here mudslides into the platitude that we are all the same (at best), or that everyone is just like me (worse), or that each apparent other is merely a narcissistic projection in thin disguise (worst of all). And this makes empathy seem easy, instant—as quick as remembering that we should care. Amid the treacle, we are encouraged to forget our differences, and in so doing forget that true empathy involves exactly the work it takes to understand across those very real differences. When we dispense with empathy's cognitive exigencies, we are left only with its emotional vibrations. As filmmakers pursue the ultimate empathy machine, they measure their success only by needle spikes in our visceral reactivity—and that has led VR down a strange path indeed.

Try *Kiya* (2015), for example, an immersive VR work of docudrama that screened at the country's most prestigious film festivals, and listen to the *real* audio of two women pleading with police to help

Is it a triumph of empathy to demonstrate that we are merely interested in ourselves?

them save their sister from an abusive ex-boyfriend, who has a gun on her, and then listen to the gunshots that killed her as her sisters scream and scream. This audio—and I stress, this is the real audio, taken from two recorded 911 calls—is accompanied by a crude digital animation of the events as they unfold.

The film's creator is Nonny de la Peña, often called the "godmother of VR." She has marveled at VR's "ability to generate intense empathy" to the *New York Times*. Describing the premiere of her first VR film (which features the actual audio recording of a crowd reacting as a man collapses into a coma), de la Peña said, "Many emerged from the goggles crying." To *Wired*: "People were just bawling. They were crying." It is extraordinary to wonder over the awesome force of VR, as if the real audio of someone screaming as her sister is murdered were insufficiently "powerful." More remarkable still is our collective failure to distinguish between the mere intensity of emotional reaction as such and the degree of empathetic identification achieved.

What is this "empathy," so efficiently "generated"? It is little more than an index of emotional arousal, a reflexive concern for an endangered body. Real empathy is also the labor of comprehension: mind-work, not gut-work alone. The empathy that guarantees our mutuality, grounds our politics, and conditions our intimacies consists in the imaginative animation of someone else's heart and mind, powered by everything you have learned with your own heart and mind about what it feels like to be a person. It is not "seeing yourself in others," but using yourself to see others clearly. It takes both attention and imagination—careful attention to a life that is different than yours, and the imagination to think your way toward it. And it takes time. We must be trained for it. Works of narrative art have been a key locus of that training since the first stories were told. Among other things, our hyped sense that VR can provide some sort of 5G empathy download is evidence of a profound and perilous failure of confidence in the work of storytelling.

STORYTELLING, really, is the issue. One of the more surprising arguments made for VR's moral utility is that it can help you empathize not only with the characters in scenes you witness, but with someone you inhabit, as you would a game avatar. Not a character you encounter, but one you try on, like a skin. In a second TED talk, Milk playfully hypothesizes that storytelling began with cavemen relaying the tale of a hunt. As a spirited animation of a caveman fit with VR headgear plays behind him, Milk triumphantly declares that now we don't have to *listen* to the caveman—we can *be* the caveman.

However, the first-person point of view and the ability to control someone's (notional) "body"—for this is what an avatar affords—are hardly the tools of intimate access storytellers might hope for. After all, in video games, the creative challenge posed by a user and character sharing a body often requires game designers to leave underdeveloped the ostensible main character, precisely to accommodate the variety of user personalities. The irony is sharp when VR works whose stated mission is to "give voice" to certain populations start to resemble a medium famous for silent protagonists.

But Milk is onto something when he describes the technology this way. VR *can* portray the hunt itself better than it can the caveman's subjective account of it. The caveman—his impressions, filtered through his specificity as a life and mind—is well beyond the reach of the medium, for now. VR has thus far struggled to achieve the real feat of morally significant storytelling—that of bringing us close to someone else's mind.

Despite the way VR has been discussed (i.e., as though it were the extreme stuntman of mediums, a film that can jump a motorcycle over seven school buses), the technology is neither super-film nor super-novel. It has its own set of storytelling powers. It adds some to the arsenal—and loses others.

VR can depict a series of events with immersive realism and render settings with astounding vividness. The latter is one of the medium's chief strengths: It can conjure an intense sense of location and of one's body in that location. This is an awesome power, and some of the more interesting early passes at narrative VR have used setting imaginatively to lure viewers into engaging, alternative story-worlds. Take, for instance, the prologue of Eugene Chung and Jimmy Maidens's *Arden's Wake* (2017), which premiered at Tribeca this year, with its evocative portrayal of murky underwater depths and mysterious floating debris.

But we should not overestimate the relevance of shared space—no matter how realistic or vivid—to empathetic identification. Visit a Syrian refugee camp in *Clouds over Sidra* (2015), by Milk and Gabo Arora, and you may learn something about what a Syrian refugee camp looks like. You may now believe in the reality of the place and its people, and you may even recall that you should care about their suffering. But you will not know what it is like to be a refugee. As
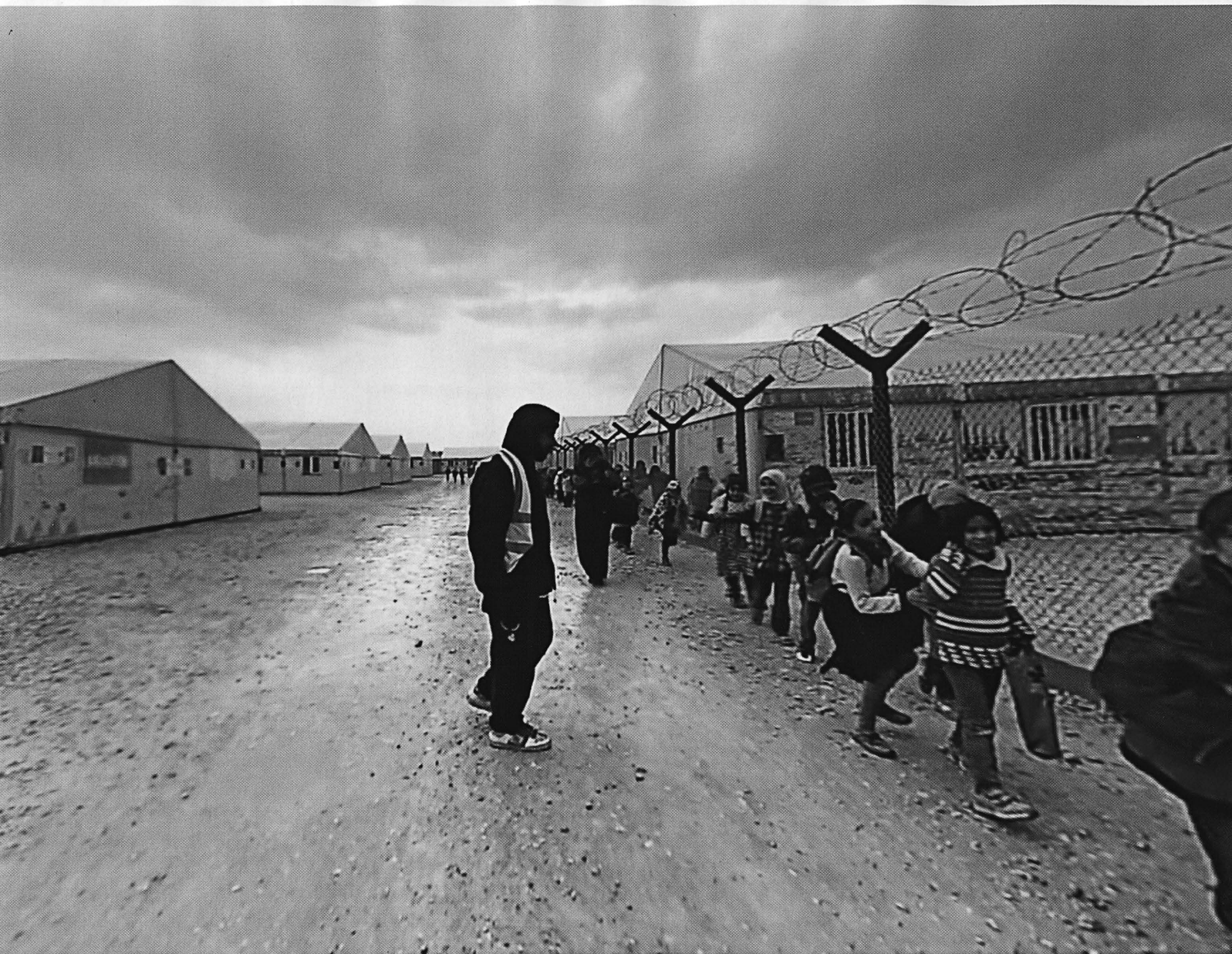
In VR, your environment may seem to change,
but your mind remains your own.
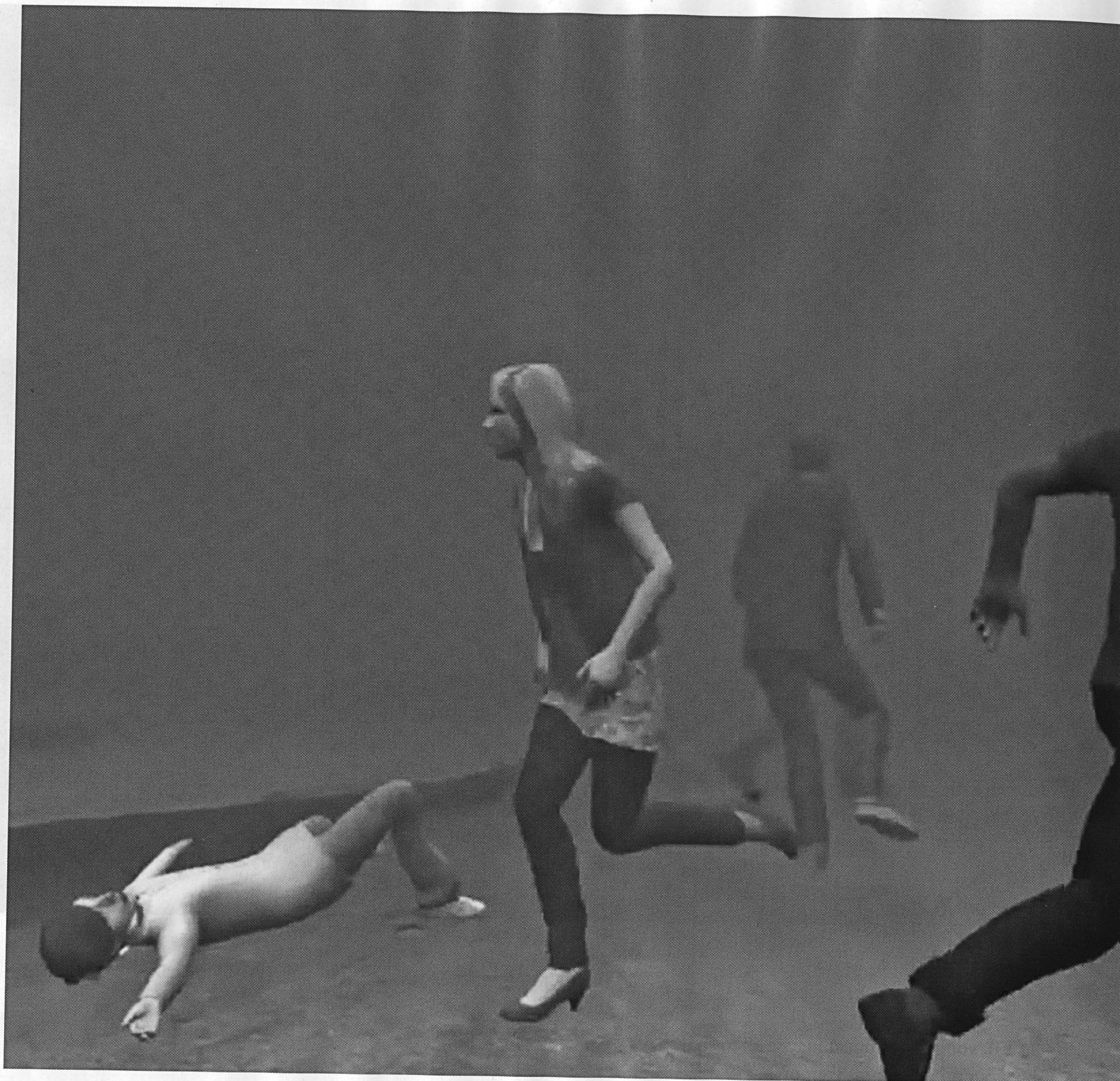
Nonny de la Peña, *Project Syria*, 2014, VR video, color, sound, 4 minutes.

VR has thus far struggled to achieve the real feat of morally significant storytelling—that of bringing us close to someone else's mind.

Paul Bloom, a Yale psychologist and one of the few skeptics of VR's powers to help us empathize, observes, the experience of being a refugee (or, as he also notes, a person who is homeless or disabled, other recent subjects of VR projects) is not primarily about the immediate physical environment. "The awfulness of the refugee experience isn't about the sights and sounds of a refugee camp," Bloom writes, but about "the fear and anxiety of having to escape your country and relocate yourself in a strange land."

Event and location are VR's best tools for portraying a life, but not many experiences can be captured exclusively this way. The more completely a person's circumstances shape his or her emotional reality, the more likely it is that VR can convey something of his or her experience. (Interestingly, VR's most salient features—its visceral, bodily presence; its immersive, participatory nature—align it closely with art historian Michael Fried's concept of "theatricality," which he famously set in contrast with true aesthetic experience, a transcendent state of "absorption.") One wonders whether the insistence that VR create empathetic identification, combined with VR's clumsiness at capturing the inner life of a specific person, is one reason that VR filmmakers have gravitated toward extreme, traumatic experiences, situations where our individuality plays the smallest role in how the event is received.

For example, imagine a city street. Low light. Late afternoon, maybe. Pedestrians are crossing at the intersection ahead. A woman walks past you. What access does the sharing of this street corner afford you to her mind? Probably very little. Now imagine a bomb goes off. People are screaming, running. (These are the events of de la Peña's 2014 VR piece *Project Syria*.) Now you and that woman are having a similar experience. Now you have some access to her inner life. But you are identifying not with the woman in particular but with the category—"bombing victim"—to which you both belong.

This is not the imaginative animation of someone else's heart and mind. This is only the brute similarity of deindividuating trauma. Indeed, one of the withering effects of certain forms of trauma and violence is that it flattens out our specific personhood—acute pain and fear, like death, are the great equalizers. (Would Kiya feel heard because we listened to her die? Would you?)

The deep work of real empathy lies in the labor of coming to understand the other, of coming to see, think, and feel as the other sees, thinks, and feels. Our most powerful tool and training ground for this fundamental work will always be narrative, and for this reason only the narrative arts—whether cinematic or textual—can cultivate and maintain our empathetic faculties. The work of the storyteller is one of precisely controlling (directing, guiding, choreographing) our attention. The artist directs our gaze, shows us what we should see, and by doing so, conspires with us to force us out of being "merely" ourselves. He or she brings certain features of a scene into relief, ignores others, and even determines the order and prominence of the elements of a given scene. It is the calculated directing of attention that mimics the movement of someone else's mind—a mind whose movement is driven by emotional investments that are different from our own. We are, through our submission to the seeing-work of another, obliged to reckon with the point of view of someone else.

In VR, however, I can turn my head (and in some cases even walk around) to examine any aspect of the scene I want. And that scene is rendered with uniform visibility in 360 degrees. All its elements are equally visible, regardless of the extent to which they bear on the narrative or matter to any particular character. And so we notice what we ourselves would notice, and feel as we ourselves would feel—not as someone else might. The sense of being in our own body only makes our own stakes, fears, and pleasures more urgent.

All of which is to say, attention autonomy—the interactive freedom to observe whatever we choose—is a hallmark of VR, one of its most charismatic features, but it shuts us out of other minds and strands us in our own. The neoliberal paradigm of individual choice here reaches its narratological climax: solipsism.

VR ISN'T GOING TO GO AWAY. And we need to figure out what to do with it. But first we must dispense with a series of fundamental and telling misprisions. An empathy machine? No. Unless by "empathy" you mean a glandular twinge. By that definition, VR is an empathy extractor. But if that is what we mean by empathy, we are all in very serious trouble. □

ALYSSA K. LOH IS A WRITER BASED IN NEW YORK. (SEE CONTRIBUTORS.)
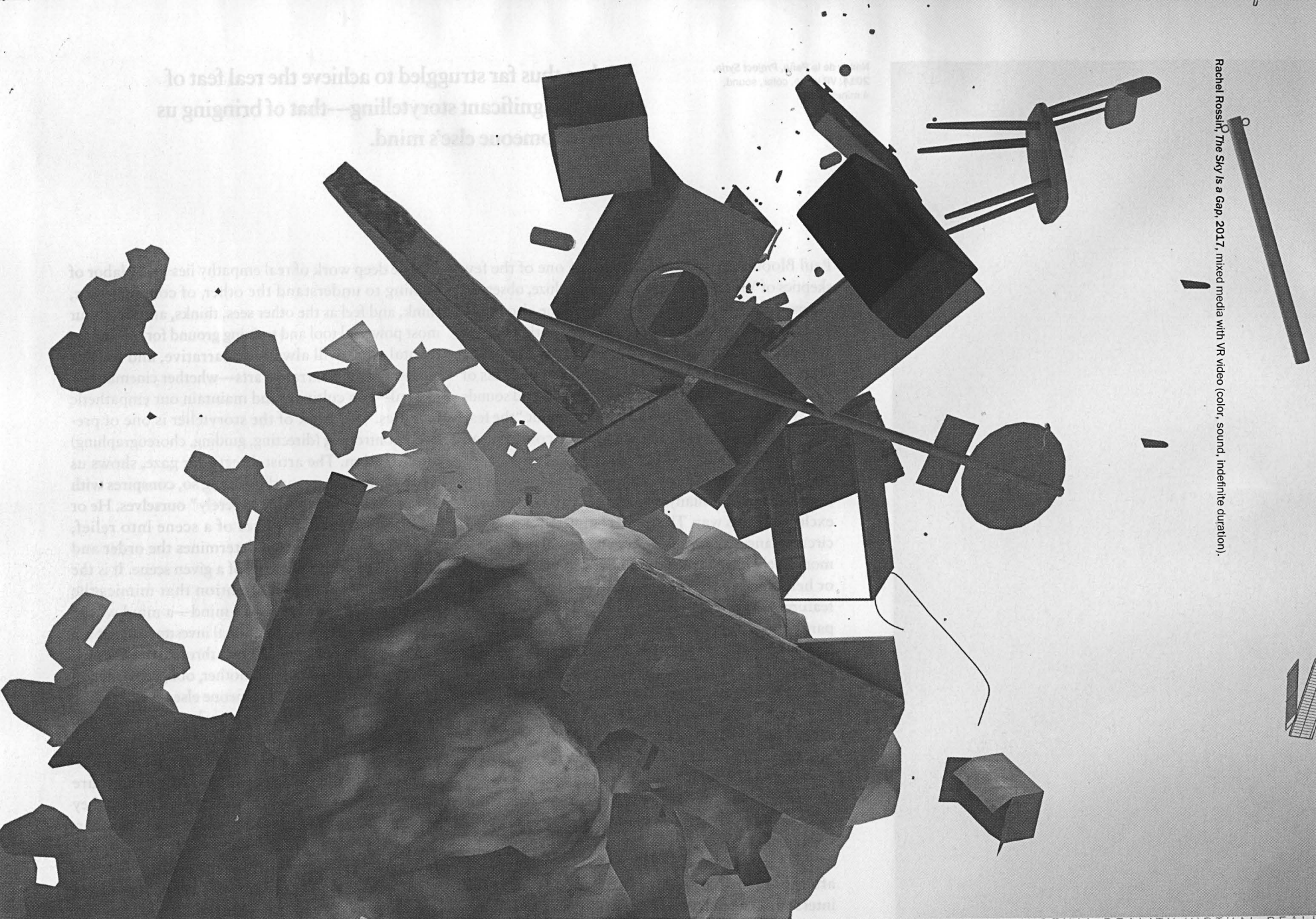
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RACHEL ROSSIN

MY WORKS in virtual reality are often crudely sentient—they have an awareness of the viewer. Most recently, I have created installations that interpolate the audience's passage through the gallery into the VR environment's timescale; the behavior, physics, and light of both physical and virtual spaces are enmeshed. In *Sky Is a Gap*, 2017, the scene is a slowly intensifying disaster—a *Zabriskie Point*–like explosion of a building. Yet the event progresses only in accordance with the viewer's physical location: Her movements through space, tracked by motion sensors, "scrub" the sequence, causing it to unfold at normal speed, sped up, or in reverse. The viewer drives the disaster with her body. Time, here, happens in 3-D. □

RACHEL ROSSIN IS A NEW YORK–BASED ARTIST. (SEE CONTRIBUTORS.)

JON RAFMAN

I BELIEVE THAT transformations in technology always follow earlier shifts in consciousness. Technological developments can therefore reveal things about how personal consciousness and social conditions have changed.

So what can we learn from the emergence of virtual reality? For one thing, VR suggests that reality itself has become permeated with the virtual. More and more, we understand the human brain as a computer made of flesh, and our online existence is increasingly intertwined with our real selves.

Secondly, VR's success tells us something about the nature of attention. I imagine a past where one could have an immersive experience simply by looking at a painting. Now, because I am so inundated with data and images, I am continually distracted. What effect does this information overload have on the mind? Do I need to be ripped out of reality, and placed into a simulation, in order to have a coherent, focused experience? Have I reached the point where in order to captivate a viewer, I have to first entrap them in a headset and control their perceptions completely? □

JON RAFMAN IS A MONTREAL-BASED ARTIST.

Jon Rafman, *Transdimensional Serpent*, 2016, mixed media with VR video (color, sound, 4 minutes 38 seconds).
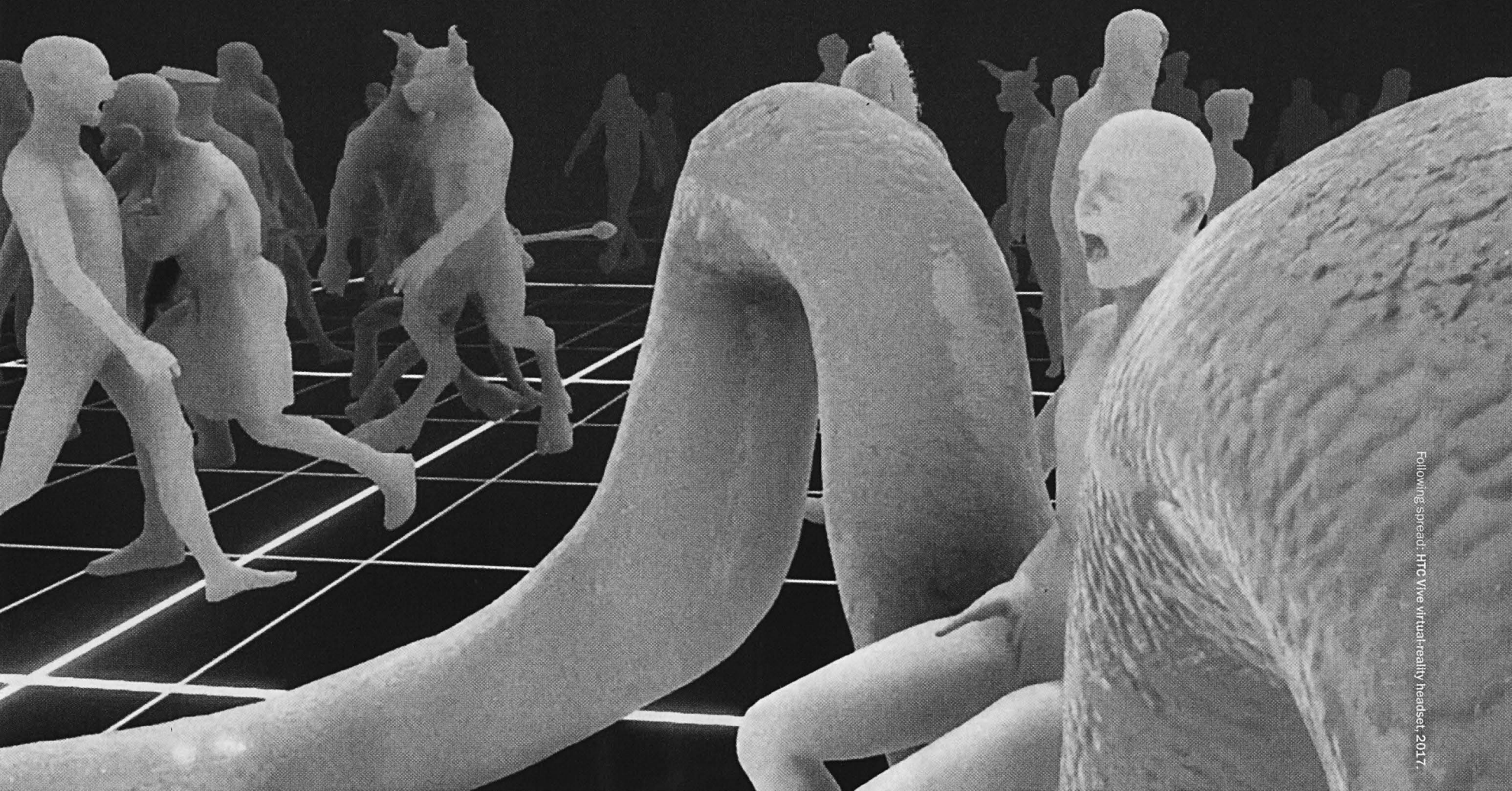
Following spread: HTC Vive virtual-reality headset, 2017.