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IN FOCUS

Humanitarian Immersions

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Introduction

Since the mid-2010s, humanitarian organizations, journalists, and artists have increasingly been turning to virtual reality (VR) and immersive film-making for its ostensibly unprecedented ability to conjure empathic feelings that lead to humanitarian action.[1] Technology companies and charitable institutions alike have touted immersive storytelling's "potential for good"; prominent examples include the United Nations High Commissioner for Refugees virtual reality program, UNICEF's Augmented Reality/Virtual Reality for Good initiative, and Oculus's VR for Good project.[2] These initiatives emphasize the power of immersive media in a variety of instructive contexts, including medical training and diagnostics, physical and psychological therapy, interactive historical education modules, and philanthropic fundraising for humanitarian causes.[3]

Scholars including Kate Nash, Mandy Rose, and Sasha Crawford-Holland have attended to the possibilities and pitfalls of experiments in immersive media within the context of documentary filmmaking; however, these analy-

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1   In this dossier, immersive filmmaking refers not only to 360-degree virtual reality films viewed through a headset but also to media projects that require participants to make decisions in order to advance a narrative and to films that create immersive sensations through their (often extended) duration.

2   See "Augmented Reality/Virtual Reality for Good," UNICEF, accessed September 15, 2021, https://www.unicef.org/innovation/XR; and "VR for Good," Oculus, accessed September 15, 2021, https://www.oculus.com/vr-for-good.

3   Taking just the Oculus VR for Good initiative as an example, as of September 22, 2021, recent updates under the "Stories" section of the initiative's website include "VR for Safety—Mine rescue teams discover a new tool for training," "VR for the E.R.—Preparing for emergencies before they happen," "VR for Heritage—A tribal past finds its future," and "VR for Action—Travelling While Black explores black America past and present." See "VR for Safety," https://www.oculus.com/vr-for-good/stories/mine-rescue-teams-discover-a-new-tool-for-training/; "VR for the E.R.," https://www.oculus.com/vr-for-good/stories/preparing-for-emergencies-before-they-happen/; "VR for Heritage," https://www.oculus.com/vr-for-good/stories/a-tribal-past-finds-its-future/; and "VR for Action," https://www.oculus.com/vr-for-good/stories/traveling-while-black-explores-black-america-past-and-present/; all accessed September 22, 2021.

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ses primarily focus on immersive media's visual components.[4] In the context of VR filmmaking, scholars such as Adam Daniel, Sarah Jones, and Steve Dawkins have drawn attention to the spectator's ability to enact a sovereign gaze within 360-degree spherical images, leaving other bodily sensations un(der)accounted for.[5] Although immersive nonfiction media depends in part on the believability of virtual environments, the fantasies at play in immersive media—which attempt to make viewers feel that they have participated in something real—are not only about creating convincing ocular illusions. They are also about generating persuasive haptic sensations and legible bodily responses from viewers. As such, the embodied experience of engaging with and navigating these environments demands sustained attention from media scholars studying immersive nonfiction. This is especially pertinent within the context of humanitarian media, which aims to inspire direct action from viewers and to foment wide-scale social change. What political and ethical concerns arise when rendering humanitarian crises not merely visible but also *tangible* for public consumption?[6]

In recent years, industry specialists, journalists, and early adopters of VR have heralded VR filmmaking as an unparalleled breakthrough in narrative storytelling, overshadowing an important element of its lineage: nonfiction media's long history of experimentation with interactivity and immersion.[7] In the context of traditional cinema spectatorship, *immersion* has traditionally been defined as the loss of one's self to the narrative; however, Alison Griffiths defines immersion as "the sensation of entering a

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4   See Kate Nash, "Virtual Reality Witness: Exploring the Ethics of Mediated Presence," *Studies in Documentary Film* 12, no. 2 (2018): 119–131, https://doi.org/10.1080/17503280.2017.1340796. See also Mandy Rose, "The Immersive Turn: Hype and Hope in the Emergence of Virtual Reality as a Nonfiction Platform," *Studies in Documentary Film* 12, no. 2 (2018): 132–149, https://doi.org/10.1080/17503280.2018.1496055; and Sasha Crawford-Holland, "Humanitarian VR Documentary and Its Cinematic Myths," *Synoptique* 7, no. 1 (2018): 19–31.

5   Adam Daniel, "Inhabiting the Image of *Collisions*: Virtual Reality Cinema as a Medium of Ethical Experience," *fusion journal* 14 (2018): 6–15; and Sarah Jones and Steve Dawkins, "Walking in Someone Else's Shoes: Creating Empathy in the Practice of Immersive Film," *Media Practice and Education* 19, no. 3 (2018): 298–312, https://doi.org/10.1080/25741136.2018.1520538.

6   Lisa Nakamura has argued that, due in no small part to the limited demographics of VR's target audiences, users, and developers, VR regularly offers "common gendered fantasies of empowerment that rely upon mastery and subjugation of virtual non-male, non-white bodies and space." The problems inherent in mediated simulations (and representations) of bodily difference and suffering are, of course, not exclusive to VR technologies, but as Nakamura reminds us, "VR 2.0 titles about refugees and other objects of pathos that situate the viewer outside the point of view of a foreign body invite the user to confuse immersive viewing with access to the actual experience of an-other." In this dossier, we extend her arguments toward questions of the relationship between immersivity, embodiment, and control. See Lisa Nakamura, "Feeling Good about Feeling Bad: Virtuous Virtual Reality and the Automation of Racial Empathy," *Journal of Visual Culture* 19, no. 1 (2020): 47–64.

7   See, for example, Chris Milk, "How Virtual Reality Can Create the Ultimate Empathy Machine," TED, March 2015, https://www.ted.com/talks/chris_milk_how_virtual_reality_can_create_the_ultimate_empathy_machine; Mark Anderson, "Can Tearjerker Virtual Reality Movies Tempt Donors to Give More Aid?," *The Guardian*, December 31, 2015, https://www.theguardian.com/global-development/2015/dec/31/virtual-reality-movies-aid-humanitarian-assistance-united-nations; and Paul Darvasi, "Five Ethical Considerations for Using Virtual Reality with Children and Adolescents," KQED, August 17, 2016, https://www.kqed.org/mindshift/46103/five-ethical-considerations-for-using-virtual-reality-with-children-and-adolescents.

space that immediately identifies itself as somehow separate from the world and that eschews conventional modes of spectatorship in favor of a more bodily participation in the experience."[8] Following Griffiths's attention to bodily participation, we conceptualize nonfiction, humanitarian immersive media as media that makes a documentary claim to the real while seeking to directly mobilize spectators' bodies through the use of interactive and engrossing tactics.[9] Throughout this introduction, we consciously engage the language used in promotional materials and interviews by the creators of many of these works—language that is often steeped in histories of exclusion and a very abstracted, and limited, understanding of VR's typical viewer. The fact that the majority of VR exhibition takes place in broadly inaccessible spaces—such as museums and festivals—means that the audiences who get to experience these works are imagined to be not only able-bodied but also correspondingly privileged in their modes of access to new technologies and artistic works.

We define *humanitarian media* broadly to include projects engaged with both human and environmental concerns; likewise, our conception of nonfiction media includes contemporary digital projects that use personal testimonies and statistical data to ground their virtual representations of real-world characters and locations. Through this framework, our dossier re-centers and historicizes embodiment across maps, gallery installations, interactive web-based projects, and contemporary VR filmmaking in order to ask how immersive nonfiction media engage, discipline, destabilize, and erase the spectatorial body. What types of humanitarian responses can nonfiction media provoke when viewers are tasked with mastering (virtual) spaces through a mastery of their own bodies?

The ethical implications of immersive nonfiction media, particularly virtual reality, have received a great deal of attention in recent years, both within media studies and beyond. In a 2018 special issue of *Studies in Documentary Film*, Jamie McRoberts, Kate Nash, Miriam Ross and Alfio Leotta, Mandy Rose, and Kim Munro considered, respectively, virtual reality's ability to invoke "sense of presence," its relationship to practices of witnessing and tourism, and the ways it has been marketed and distributed as a vitally *new* technology, a tool for generating empathy, and a representative of a particular kind of hope for the future.[10] Legal scholars such as Woodrow Hartzog and Frederic Stutzman have also examined the ways that existing social values are built into new technologies as well as the troubled (ethical and

8   Alison Griffiths, *Shivers Down Your Spine: Cinema, Museums, and the Immersive View* (New York: Columbia University Press, 2008), 2.

9   While documentary scholarship has largely shifted toward analyses of subjectivity, reflexivity, and hybridity in nonfiction media, we emphasize a "claim to the real" here because contemporary VR and immersive media projects often insist on their indexical relationships to the physical world in order to market themselves as nonfiction, even when they are created entirely through computer-generated imagery. We elaborate this point further in our essay "On Bodily Absence in Humanitarian Multisensory VR," *Intermédialités: Histoire et théorie des arts, des lettres et des techniques* (*Intermediality: History and Theory of the Arts, Literature and Technologies*), no. 34 (Autumn 2019): 1–28.

10 See Kate Nash, ed., "Virtually Real: Exploring VR Documentary," special issue, *Studies in Documentary Film* 12, no. 2 (2018).

political) boundaries between virtual and real worlds.[11] Media psychologists and internet researchers have also considered the degree to which immersive technologies can influence a user's sense of embodiment and subjectivity and, more recently, how these changes might cause shifts not only in immediate behaviors but also in longer-term social attitudes.[12] Across each of these inquiries, researchers ask what is ultimately a habitual set of questions that accompany innovations in media form: What hegemonic legacies remain, and what possibilities—for the transmission of information, for the mediation of human relations—might be newly available?

This In Focus dossier works to move beyond the discourses of empathy and witnessing that have dominated scholarly, popular, and humanitarian approaches to immersive media. We consider the historical lineages that have led to the contemporary "humanitarian VR" movement in order to better understand how and why VR is often celebrated as an exceptional or singular empathy machine.

Through a range of international case studies, both historical and contemporary, our contributors examine the fraught relationship between embodiment, trauma, truth claims, and knowledge production within nonfiction and documentary forms. Their essays consider not only how attempts to cultivate immersivity and interactivity have long been a part of humanitarian nonfiction media-making but also how these media objects elicit particular performances of humanitarianism and (re)construct ideal viewers as well as ideal citizens. They further consider the potentially productive political and ethical engagements with humanitarian questions that can emerge from cultivating embodied knowledge instead of, or in tandem with, visual evidence.

The dossier opens with two case studies that historically and politically situate experiments in immersive humanitarian documentaries. In "Modern Time: Abbas Kiarostami's Immersions, from Sponsored Documentary to Slow Cinema," Simran Bhalla traces connections between immersivity and humanitarian aims to a set of Abbas Kiarostami's early state-sponsored documentaries, which encourage bodily self-discipline as a form of civic behavior—behavior that, in turn, is framed as a humanitarian endeavor. Bhalla then examines Kiarostami's posthumous film, *24 Frames* (2017), to argue that Kiarostami's independent work, while significantly more abstract and experimental, continues to demand bodily management from spectators through its immersive tactics. By considering the relationship between pedagogical/state media, gallery installations, and theories of immersion, Bhalla shows that both Kiarostami's educational-institutional and independent films reorient the viewer's relationship to time through duration and repetition, demonstrating how nonfiction films attempted to cultivate immersion long before VR technology became accessible to the public.

Alison Griffiths's essay, "Virtual Reality and the Cartographic Imagination,"

11   Woodrow Hartzog and Frederic Stutzman, "Obscurity by Design," *Washington Law Review* 88, no. 2 (2013): 385–418.

12   See James J. Cummings and Jeremy N. Bailenson, "How Immersive Is Enough? A Meta-Analysis of the Effect of Immersive Technology on User Presence," *Media Psychology* 19, no. 2 (2016): 272–309; and Mila Bujić, Mikko Salminen, Joseph Macey, and Juho Hamari, "'Empathy Machine': How Virtual Reality Affects Human Rights Attitudes," *Internet Research* 30, no. 5 (2020): 1407–1425.

explores the shared aesthetics of, and enduring tropes across, medieval cartography and contemporary ethnographic VR filmmaking. She contends that, much like VR, medieval maps served as vessels for humanitarian and civilizing discourses, encouraged bodily intervention, and invited the viewer into a relation with the world that, while alluring, necessarily relegated the images and communities being represented to a symbolic space—the space of otherness. Griffiths argues that neither representational mode can make claims to objectivity or heightened empathy; by prioritizing the spectator's interactions and identifications, these technologies work in the service of an imperialist logic that aims above all to transform the world into a visible and knowable entity.

We then move into two provocations on contemporary humanitarian immersive media. In "War and Humanitarian Aesthetics: Notes on Modular Immersion," Christian Rossipal presents a series of case studies in which humanitarian and military organizations, most notably the Red Cross and the United States Army, developed immersive media projects to raise awareness about the horrors of warfare, treat post-traumatic stress disorder in army veterans, train personnel, and improve the mental well-being of Syrian refugees, among other goals. Across all of these projects, he argues, VR's immersive quality, and more specifically its ability to engage the spectatorial body on a pre-linguistic and non-representational level, is what makes it at once exceptionally effective and exceptionally dangerous. Rossipal's essay reveals the extent to which, under neoliberal governance, the binary distinction between peacekeeping and militarizing discourses is a false one; indeed, he reveals immersive media to be a particularly salient site for their convergence.

In our essay, we analyze the web-based interactive documentary *Migration Trail* (Alison Killing, 2017) to consider how the project's real-time narrative, which unfolds over the course of ten days, attunes viewers' bodies to the temporalities of irregular migration journeys. Thinking against the frameworks of urgency and immediacy that pervade humanitarian nonfiction media, we explore what possibilities *Migration Trail* offers through slowness. Whereas the humanitarian immersive media described by Rossipal plunges the viewer into a virtual environment where intervention is a primary aim, *Migration Trail* denies its users the ability to participate in its narrative in any direct or meaningful way. We explore the ways in which the project invokes the shifting sensations of waiting and uncertainty experienced by both migrants and the community members from whom they are separated to consider the recuperative possibilities of humanitarian immersive nonfiction media.

Closing out the dossier is an interview with multidisciplinary artist and educator Aggie Ebrahimi Bazaz. Her films and installations engage narratively with questions of citizenship, identity, and social justice and in many ways operate within a humanitarian framework. However, Bazaz experiments with form in order to work against those documentary conventions that reinforce existing social hierarchies. Bazaz details her working process, in particular her interest in co-creation and what she terms "critical reflexivity" as well as the ways that she situates her own work within documentary theory.[13]

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13 See Aggie Ebrahimi Bazaz and Liz Miller, "Invited and Implicated: Toward Critical Reflexivity in Non-fiction VR," *Digital Radical*, Center on Digital Culture and Society,

In exploring spectatorial embodiment in immersive media alongside documentary's history of bodily engagement, we hope to foster a generative, multidisciplinary conversation that extends existing discourses about nonfiction media's role in not only cohering humanitarian subjectivities but also training—or mobilizing—bodies for action. The essays contained herein provoke exciting encounters across different historical and national contexts, media forms, and theoretical approaches. What they share is a commitment to interrogating the ways we both live inside our technologies and are continuously transformed by them.[14]

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Simran Bhalla

Modern Time: Abbas Kiarostami's Immersions, from Sponsored Documentary to Slow Cinema

Abbas Kiarostami's educational film, *Beh tartib ya bedoun-e tartib* (*Orderly or Disorderly*, 1981), features four sequences of Tehran's citizens engaging in quotidian activities. In the first, a group of schoolboys descends the stairs to the schoolyard after class. In the second, they line up to drink water from the school water fountain. In the third, they board the school bus. The fourth sequence focuses on drivers negotiating a busy Tehran cross street. For each activity, we see how city life proceeds if citizens are orderly or disorderly. The orderly version of doing things saves everyone time, whereas in the disorderly versions, no one is able to complete their duties. This sense of time loss is experienced by the audience, who see the results of activities completed in an orderly fashion but are left waiting by disorderly citizens who fail to realize their goals.

 Beh tartib ya bedoun-e tartib is one of many films Kiarostami made for Kanoon, or the Iranian Center for the Intellectual Development of Children and Young Adults, the government organization that employed him for several years before he became an independent filmmaker. These non-profit films were made to encourage and, indeed, model good citizenship. This essay examines Kiarostami's state-sponsored instructional documentaries as pre-digital examples of pedagogical media that animate modes of bodily

conduct, in service of purportedly humanitarian or civic goals. I argue that Kiarostami's use of a time-based, and time-bound, medium's immersive potential aided viewers in their bodily adaptations to new temporal conditions. This history also contextualizes Abbas Kiarostami's immersive use of duration in later independent films, such as *24 Frames* (2017).

Many of the sponsored films were produced before the Islamic Revolution of 1978–79, when Iran was still a constitutional monarchy ruled by Mohammad Reza Pahlavi. His wife, Farah Pahlavi, founded Kanoon. The Pahlavi regime's concerted interest in modernization is evident in the lessons and aesthetics of their state-sponsored films. Scholars of colonialism and documentary such as Peter J. Bloom argue that photorealistic imagery of social and public health problems, particularly ones perceived to originate in unmodern practices, helped to justify colonial interventions on a humanitarian basis. Such images link caring citizenship at home with civilizing missions and methods abroad.[1] Here I propose that developing nation-states such as Iran likewise configured their state-sponsored educational films in terms of their humanitarian purpose, by tying citizens' bodily conduct to their own good health and well-being. Indeed, the Shah of Iran writes in his autobiography that films help communicate scientific and medical knowledge to the masses, demonstrating "new ways for helping ordinary people everywhere."[2]

Institutional media pedagogy also has a long relationship to theories of immersion. Museums construct immersive exhibitions and project educational IMAX films, militaries use virtual reality programs for training, and interactive digital projects aim to educate participants about histories and communities.[3] Immersion as a pedagogical and epistemological method is also foundational in anthropology and ethnographic research. In anthropology, *immersion* has historically referred to a researcher's ability to absorb themselves in the field linguistically, socially, and professionally as a participant-observer in order to deepen their knowledge and perspective of the subject being studied. Anthropologists such as Margaret Mead popularized this method of cultural learning—of living with the subject, in one sense or another—which now informs some modes of *immersion* in media pedagogy.[4]

Immersive pedagogical modes rely on duration, repetition, and the temporality of embodied activities. The instructional films I focus on here, *Do rah-e hal baraye yek massaleh* (*Two Solutions for One Problem*, 1975) and *Beh tartib ya bedoun-e tartib* (both directed by Abbas Kiarostami), also engage in repetition and the evocation of "real time" to communicate various forms of bodily conduct to their audiences. They do so by demonstrating the full duration,

1   See Peter J. Bloom, *French Colonial Documentary: Mythologies of Humanitarianism* (Minneapolis: University of Minnesota Press, 2008).

2   Mohammad Reza Pahlavi, *Mission for My Country* (London: Hutchinson, 1961), 168.

3   See Alison Griffiths, *Shivers Down Your Spine: Cinema, Museums, and the Immersive View* (New York: Columbia University Press, 2008); Sasha Crawford-Holland, "Virtual Healing: Militarizing the Psyche in Virtual Reality Exposure Therapy," *Television & New Media* 20, no. 1 (2019): 56–71; and research projects such as Kristy H. A. Kang, *City Stories: Mapping the Spatial Narratives of Singapore's Landscapes*, http://citystories.sg.

4   Minette Hillyer, "Camera Documents Made at Home: Visual Culture and the Question of America," *Film History* 27, no. 4 (2015): 46–75.

or every necessary step, of various activities. In doing so, they also reveal how individual bodily movements impact groups and environments.

In using formal structure to emphasize temporality, these films share an impulse with another genre of film: slow cinema. Scholars have also identified other immersive qualities in slow cinema's contemplative long takes and static shots, enveloping soundscapes, and hapticity. They claim that these qualities can generate intimacy and that their meditative nature creates its own mode of heightened engagement.[5] Works of slow cinema often feature sequences that mimic the temporality of everyday life or present duration in ways that invite viewers to feel the passing of time. Hence Matilda Mroz draws on Henri Bergson's writing on duration as something materially experienced to argue that the immersive nature of Lucile Hadžihalilović's *Innocence* (2004) is based on its evocation of how its characters experience time. Similarly, Kiarostami's films depict the "protracted, lived duration" that Mroz contends is immersive.[6]

Salomé Aguilera Skvirsky advances the idea that media representing labor might be considered immersive. While Skvirsky more commonly uses the term *absorption*, she does not find meaningful distinction between the two terms as regards the viewer's experience. She writes that *absorption* represents "what I take to be a common experience of immersion when one is faced with processual representation."[7] Repetitious tasks and sequences are also prominent in works of slow cinema, such as films by Chantal Akerman and Béla Tarr. These, too, rely on creating "rhythms" or temporalities in order to absorb the viewer.

These theories of slow cinema and process media—which can share durational and demonstrative qualities—should together inform our reading of Kiarostami's early nonfiction films. The films include processual elements and depict how individuals or groups experience time while engaging in daily activities in order to communicate time to the audience. Indeed, all Kiarostami's films take pleasure in the details of both local environments and manual activities, often evoking what Skvirsky terms "kinesthetic identification," or empathy in the spectator.[8] Below, I demonstrate that the historical and industrial contexts in which Kiarostami worked are central to understanding how his films engage these identificatory modes of spectatorship.

State-sponsored films in developing nations often addressed anxieties about modernity, both implicitly and explicitly, and provided pedagogies for being modern and adjusting to new material realities. This frequently centered on new forms of public self-discipline, mostly concerning bodily control. One such important tool for modern conduct was time management. As the historian Cyrus Schayegh argues, in early- to mid-twentieth-century Iran, time had been "transformed into a commodity, to be filled with activity . . .

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5   See Tiago de Luca and Nuno Barradas Jorge, "Introduction: From Slow Cinema to Slow Cinemas," in *Slow Cinema*, ed. Tiago de Luca and Nuno Barradas Jorge (Edinburgh: Edinburgh University Press, 2015).

6   Matilda Mroz, "Performing Evolution: Immersion, Unfolding and Lucile Hadžihalilović's *Innocence*," in de Luca and Jorge, *Slow Cinema*, 292.

7   Salomé Aguilera Skvirsky, *The Process Genre: Cinema and the Aesthetic of Labor* (Durham, NC: Duke University Press, 2020), 30 (emphasis mine).

8   Skvirsky, 41.

Traditional life, with its protracted conversations, breaks, delays, and slow motion, seemed out of tune with the exigencies of the new age."[9] Time management was important for new modes of transport, such as cars, trains, and buses; communication modes, such as the telephone; and work, as labor and education hours became increasingly regulated. Urban leisure activities—such as moviegoing—also relied on the ability to manage one's time. If time was well-organized, then both work and leisure would be productive.

Kiarostami's Kanoon films echoed popular social ideas in Iran concerning children's moral education, which themselves had emerged from mid-twentieth-century psychological discourses. By this period, psychology had become a popular medical field in Iran, utilizing specialized scientific understanding of human behavior both to address newly identified nervous disorders and the social problems they might engender as well as to provide advice to citizens on how to cope with new anxieties. Iranian psychological thought incorporated and reconciled ideas both from modern Western psychology and Iranian philosophy.

The Iranian psychological tradition that developed focused primarily on the qualities of willpower and attention. These discourses extended to parental instruction. Schayegh observes, "Authors stressed children's special psychological condition, examined the role played by instincts and willpower, and debated how the need for children's discipline could be harmonized with their willpower, that is, the associated freedom of action and independent personality."[10] Writers of psychological texts considered both schools and parents responsible for *parvaresh*, or the moral education of children. Kanoon, which had cultural centers throughout the country (including mobile libraries and cinemas), provided a space for parents to educate their children in moral and civic values. In addition to films, the center also produced books, tapes, and theater. Frequently, state-sponsored films integrated scientific knowledge with values of will and self-reliance, for example, instructing children about hygiene, wellness, and even sex education. Some Kanoon films, such as Kiarostami's film *Dandan dard* (*Toothache*, 1980), which concerns dental hygiene, operated in this mode of personal scientific instruction for children. Others focused more broadly on the moderation of moral behavior. These films were often set in schools, which demonstrated how good conduct was also civil conduct and showed how such conduct related to productivity and progress. As Schayegh notes, "Rationalism and reasoned argumentation would benefit pupils, and by extension, society as a whole."[11]

The form of Kiarostami's early short *Do rah-e hal baraye yek massaleh* embodies these communitarian values of logic and rationalism. Kiarostami's focus on action and reaction development models efficiency and economy through form, while the use of a scoreboard as a visual device emphasizes a mathematical understanding of behavior. In the film, Dara, a schoolboy, borrows a textbook from his friend Nader. When he returns it, the cover

9   Cyrus Schayegh, *Who Is Knowledgeable Is Strong: Science, Class, and the Formation of Modern Iranian Society, 1900–1950* (Los Angeles: University of California Press, 2009), 99.
10 Schayegh, 172.
11 Schayegh, 38.

is torn. In the first "solution," Nader takes revenge by tearing the cover of a book belonging to Dara, who in turn snaps Nader's pencil, and a cycle of serial property destruction ensues. The visual presentation of Dara and Nader's conflict is schematic. Each action takes place in one shot, filmed in medium close-up, with a corresponding reaction shot. The reaction shots draw attention to the boys' increasing agita; viewers can even observe their breaths becoming shorter and faster.

Meanwhile, an animated sequence shows viewers a tally of these offenses on a chalkboard. A disembodied hand writes each infraction on the chalkboard, suggesting an omniscient impartiality.[12] Finally, the film presents the second scenario, in which Dara notices that he has torn Nader's textbook and mends it with glue. The presentation is almost identical until the children resolve their problem and play outside. Here Kiarostami uses a wide establishing aerial shot to show viewers the dozens of schoolboys playing on the basketball court. He then cuts to Dara and Nader, situating them as part of a larger community in which they are participants and emphasizing their social responsibility.

In the first "solution," the film demonstrates the consequences of their disregard for each other's personal property (and, by extension, for each other's work). Not only is property destroyed, but things also devolve into a physical fight, and both boys are injured. In the second "solution," the film ends with the boys playing on the school's outdoor court with the rest of their peers. It clearly demonstrates the value of self-directed responsibility for oneself and to others and presents isolation as the consequence of antisocial behavior.

Skvirsky compiles viewer reactions to process media (focusing, in her initial example, on educational films), which register this media as immersive. She writes that "process narration," which involves elements of steps and repetition structured by narrative, is responsible for this sense of immersion. *Do rah-e hal baraye yek massaleh* was one of several of Kiarostami's instructional films to operate in the mode of permutations. These conclude, as with the examples Skvirsky provides, in narrative closure, as the viewer's curiosity is sustained through the result of an often recognizable set of actions.[13]

Beh tartib ya bedoun-e tartib presents a mediated version of this narrative form in which the director uses a clapperboard to signal new permutations of the same scene. These variations include shots of students calmly exiting a room in single file or pushing and shoving one another in an unruly manner. Another variation features a polite queue at the water fountain, in which each child parches their thirst with a full glass, versus an injurious rush in which the tank is knocked over, wasting water. As in *Do rah-e hal baraye yek massaleh*, Kiarostami uses exterior aerial shots to show the impact of individual conduct on a larger group of people, implying the larger

12   Though this film does not explicitly foreground the film technology involved in its production, as other Kanoon documentaries do, the animated sequence nonetheless gestures toward the possibilities of new technologies.

13   *Ghazieh shekl-e aval, Ghazieh shekl-e dovom* (*First Case, Second Case*, Abbas Kiarostami, 1979) expands on the same form—albeit with the inclusion of interviews with authority figures providing their interpretation of good and bad behaviors—though it also deviates from it in order to make a political argument.

social and humanitarian benefits of bodily management.[14] Another pair of scenes feature children boarding a school bus. Here, Kiarostami uses a time counter on screen to track how long it takes for children to board the bus when they are doing so in an organized versus a disorganized manner.[15] The viewer must experience this delay along with the individuals in the film. A shot of the boys rowdily boarding the bus focuses on the physicality of bodies pushing against one another. Their hands tightly grip the door as they strain to enter; they grimace and exclaim as others shove past them. One of the narrating voices comments on how long the disorganized boarding takes, and the other responds, "Well, it's supposed to take time. That's what we're trying to show."[16]

Beh tartib ya bedoun-e tartib provides a useful example to discuss how Kiarostami reflexively depicts the way in which modernity reordered one's visual and sensory environment. The rise of psychology in Iran had accompanied a perceived preponderance of mental health problems. Medical writings from the midcentury argued that "people are unprepared to adapt to the rapid progress of civilization" and that the "confused, noisy, and agitated" social conditions of the modern age were the source of an increase in anxiety and anti-social behaviors.[17] Cinema represented and negotiated the qualities of condensing speed and time that characterized emergent modernity and its discontents.[18]

Each scenario in Beh tartib ya bedoun-e tartib targets the individual's ability to understand and manage their body in relation to time—and particularly the economizing technologies of speed and mobility—and their impact on civil society. Kiarostami's later, slow films are freed of the imperative to educate viewers about conduct, yet they retain a similar attention to quotidian activities and their durations. These later films are also imbued with a developmentalist-humanitarian perspective. For example, in Zendegi va digar hich (Life, and Nothing More . . . , 1992), Kiarostami returns to Koker, Iran, where he made a previous film with local non-actors and which has since been devastated by an earthquake. Kiarostami casts an actor as a version of himself in this semi-fictional film that focuses on details of how real

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14 The disembodied voices of the filmmakers reviewing the film reel amplify the aerial shot's connotations as a perspective of surveillance, emphasizing the state-sponsored film's governmentality.

15 Skvirsky invokes Alfred Hitchcock's theory of suspense, in which the example given includes the audience's attention to a clock ticking, their anticipation heightened by knowing that something will happen, or must be done, in a specific time frame.

16 The second half of the film concerns pedestrians at a busy intersection. Orderly scenarios demonstrate how, by obeying the signals of traffic lights, pedestrians can cross the street safely and vehicles can avoid accidents and delay. The film has a comic dénouement, in which the crew calls for an orderly take, but the drivers and pedestrians they are filming do not observe the guidance of stoplights or the traffic policeman. Kiarostami later made another sponsored documentary about traffic management, Hamshahri (Fellow Citizen, 1983), which focuses on the frustrating and long afternoon of a traffic policeman dealing with drivers who try to negotiate road rules.

17 Schayegh, Who Is Knowledgeable, 90.

18 See Leo Charney, "In a Moment: Film and the Philosophy of Modernity," in Cinema and the Invention of Modern Life, ed. Leo Charney and Vanessa R. Schwartz (Berkeley: University of California Press, 1996); and Miriam Hansen, "Benjamin, Cinema and Experience: 'The Blue Flower in the Land of Technology,'" New German Critique, no. 40 (1987): 179–224.

lives in the region were impacted by the earthquake. In 2001, the United Nations commissioned Kiarostami to film *ABC Africa* (2001), a documentary on an NGO working with Ugandan orphans, in which he appears. Here, he emphasizes the children's perspectives through contemplative camera-work and showcases their resilience through a focus on the persistence of mundane events.

Kiarostami's final (posthumously released) film, *24 Frames*, is certainly his slowest, consisting of twenty-four shots, largely of natural landscapes, each roughly four and a half minutes long. The shots are almost entirely still, with only short flickers of movement. As the critic Bilge Ebiri writes, "Understated and languid, these twenty-four segments . . . may at first feel more like environments than components of a movie."[19]

In reading *24 Frames* alongside Kiarostami's state-sponsored films and documentaries, we can identify a genealogy of his formal strategies and their relationship to embodied spectatorship and immersion, developed over the course of his diverse oeuvre. Although *24 Frames* does not elaborate on specific activities through multiple sequences or have a conventional narrative, it does rely on its audience coming to understand its themes through a firm temporal structure that includes both repetition and references to previous events or images in the film. For example, the first sequence is a gentle animation of Pieter Bruegel the Elder's painting *Jagers in de Sneeuw* (*The Hunters in the Snow*, 1565). Several other sequences feature animals congregating; in a few, gunshots disperse the creatures. The animals are computer animated, at times visibly so, but Kiarostami uses time to make the viewer believe in the environment. Hence they become startled when it is disrupted, from time to time, by unseen human intervention. Much of the film presents a surveillant's view on nature: the camera is concealed and unobtrusive, and the viewer must patiently watch for new details. Where Kiarostami's state-sponsored films work to acculturate the viewer to modern life in Iran, *24 Frames* asks instead that they adapt to the pace of the natural world, viewed from a distance. Instead of training the viewer to be a good citizen, Kiarostami concedes that the filmmaker—who has striven to humanize his subjects through sensitivity to duration and generosity with detail—remains a manipulator of natural time and space.

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19 Bilge Ebiri, "*24 Frames*: The World Made Visible," *Current*, January 8, 2019, https://www.criterion.com/current/posts/6132-24-frames-the-world-made-visible. Ebiri also commented on social media that film may be immersive even for nonhuman viewers, capturing how his cat is "mesmerized" and "transfixed" by the film, opening up new avenues for thinking about immersive characteristics of film and other visual media.

Alison Griffiths

Virtual Reality and the Cartographic Imagination

The eye carries men to different parts of the world.
—Leonardo da Vinci[1]

While virtual reality (VR) scholars have not been blind to its aesthetic and spectatorial affinities across large-scale painting, panoramas, dioramas, stereoscopy, globes, cinema, IMAX, and 3D video, less attention has been paid to the influence of cartographic techniques from the medieval and early modern era of geographic exploration.[2] Without denying the obvious phenomenological differences between VR and cartography, cartographic techniques may be considered part of the long dureé of recombinant media that bring the world into visibility, practices of imaginary projection and reconciliation that serve as containers for civilizing and humanitarian discourses. Through the deployment of high-definition 3D cameras to record the world and optical technologies and data systems to reassemble it for users, VR draws meaning and is haunted by much earlier cartographic practices that interpellate users into subject positions that resonate in uncanny ways with medieval cartography. As liminal, multilayered, and disjunctive artifacts of the real and the imagination, medieval maps and humanitarian VR are discursive allies, trafficking in forms of embodied seeing, virtuality, and presence that

1   Leonardo da Vinci, cited in Samuel Y. Edgerton Jr., *The Renaissance Discovery of Linear Perspective* (New York: Basic Books, 1975), 92.
2   Alfio Leotta and Miriam Ross, "Touring the 'World Picture': Virtual Reality and the Tourist Gaze," *Studies in Documentary Film* 12, no. 2 (2018): 151. For introductions to VR, see Oliver Grau, *Virtual Art: From Illusion to Immersion* (Cambridge, MA: MIT Press, 2002); and Ken Hillis, *Digital Sensations: Space, Identity, and Embodiment in Virtual Reality* (Minneapolis: University of Minnesota Press, 1999). For a useful overview of VR's emergence, see Brooke Belisle and Paul Roquet, "Introduction: Virtual Reality: Immersion and Empathy," *Journal of Visual Culture* 19, no. 1 (2020): 3–10.

allow access to reified worlds from a safe distance. This essay probes some of these correspondences, arguing that while technologies of virtual projection are effective in generating wonder and curiosity about the human condition, this comes at the cost of a deeper intellectual engagement.

Medieval maps were resplendently visual and included vignettes of Indigenous peoples, wildlife, cities, and religious figures; as cartographic scholar John Block Friedman explains, a map was more a "visual work of art and expression of contemporary cosmology and theology than it was an object of utility"—which is to say, a way of imagining the world through a particular mode of humanist and Christological thought.[3] Both medieval maps and VR invite viewers to picture themselves moving through the world, along visual pathways that could be traced with a finger or eye, projecting their bodies into virtual spaces that draw authority as much if not more from the imagination as from cartography or geography. No world map did this better than the *mappa mundi*, a world map that functioned as a metaphoric storage device for all manner of cosmological, religious, and geographical knowledge. *Mappae mundi* represented Latin Christianity as forging inexorably westward from Paradise in the east, to the Apocalypse in the west, a journey through time itself. Densely packed with encyclopedic knowledge and hearsay about what lay at the edges of the world, *mappae mundi* regularized vision, triggering a measure of interactivity through an invitation to touch or—depending on the method of display—walk around or over the map.

Medieval map makers exploited the *idea* of maps as sensual objects for imaginative projection and immersion centuries before VR pioneers envisioned them as a navigable geospatial technology.[4] Similar tropes of reification are deployed in each form: people transformed into pictograms or emblematic images that viewers cannot help but stare at and that invite bodily identification in relation to movement, travel, space, and difference.[5] Portolan charts, mariners' guides identifying coastal ports that also contained information about what lay inland—such as topographic features, tribal leaders, Indigenous people, and wildlife (both real and imagined)— also leveraged meaning from art as well as science. Geographic reality co-

3   John Block Friedman, *The Monstrous Races in Medieval Art and Thought* (1981; repr., Syracuse: Syracuse University Press, 2000), 1, 38.

4   The idea of film creating space for viewers to wander about and act like voyagers is by no means a new endeavor with Tom Conley, Giuliana Bruno, Anne Friedberg, Teresa Castro, Ken Hillis, Brooke Belisle, and others exploring similar questions. Belisle, for example, exposes the paradox of the whole world view in Google Earth VR and precursive worlding technologies such as globes and photographs of the "Blue Planet," while Bruno views cinema and exploration as virtually one and the same, similarly driven by a language of curiosity and a look that sees and seizes. See Giuliana Bruno, *Atlas of Emotion: Journeys in Art, Architecture, and Film* (London: Verso, 2002), 76, 79; and Brooke Belisle, "Whole World within Reach: Google Earth VR," *Journal of Visual Culture* 19, no. 1 (2020): 112–136, https://doi.org/10.1177/1470412920909990. (Belisle guest-edited this special issue on VR with Paul Roquet.) See Tom Conley, *Cartographic Cinema* (Minneapolis: University of Minnesota Press, 2006); Bruno, *Atlas of Emotion*; Anne Friedberg, *Window Shopping: Cinema and the Postmodern* (Berkeley: University of California Press, 1994); and Teresa Castro, *La pensée cartographique des images* [The cartographic thought of images] (Lyon: Aléas Éditeur, 2011).

5   See Thomas Fuchs, "The Virtual Other: Empathy in the Age of Virtuality," *Journal of Consciousness Studies* 21, no. 5–6 (2014): 152–173.

existed with the imagination in *mappae mundi* and portolans; both they and VR invite bodily intervention, whether that be walking around a medieval portolan chart spread out on a ship's map table—in order to read the toponyms and see the world the right side up—or reaching out for a phantom object in the space of VR; and in both we detect a tension between seeing as a source of knowledge and power versus seeing as a locus of disquiet or discombobulation. In VR, for example, the user's ability to absorb geographical information from a unitary subject position is threatened by an anxiety about being swallowed up by the world, while in the case of medieval maps, the user has a sense of dread about what lies at the edge of the map where human oddities, Indigenous people, and Judgment Day reside.

Like VR, medieval maps constructed "a global space for the reader [or viewer] to imagine and inhabit, pre-furnished with unique peoples, places, and things, both wonderful and grotesque, that could serve as nodes of mnemonic retention."[6] Phenomena that could not be fully explained and were widely debated among natural philosophers found a way onto the map; Indigenous peoples whose bodies had adapted in ingenious ways to different climates took up residency on the margins; and real and mythical animals were scattered here and there in images that might have been copied from bestiaries.

In order to explore the subtle ways in which medieval mapmaking foreshadows some of the governing rubrics of humanitarian VR, I compare and contrast an Italian portolan chart completed by Johannes Oliva in 1602 (identified as HM 40) and the *Vallard Atlas* (1547), one of the first world maps to depict the existence of Australia, to the VR experience *Nomads* (Felix & Paul Studios, 2016).[7] *Nomads* consists of three eight- to twelve-minute VR films set among Maasai pastoralists living along the Great Rift Valley in southern Kenya and northern Tanzania; Bajau Laut sea nomads of South East Asia; and pastoral yak herders from the Mongolian Steppes. Even though the *Nomads* trilogy is less explicitly engaged with humanitarian discourses than some other VR works, such as *Clouds Over Sidra* (Gabo Arora and Barry Pousman, 2015), its reference to climate change and Indigenous sovereignty resonates with humanitarian VR.

Oliva's portolan chart of the Mediterranean Sea and surrounding countries brilliantly exemplifies the hybrid and sensual quality of medieval maps; pictogramically dense, with vignettes of cities, banners, figures of sovereigns, and coats of arms, and spread across the northern and western coasts of Africa are depictions of wildlife, including an elephant, lion, and camel ridden by a Tunisian man (as well as mythical creatures such as unicorns; see Figure 1). Geographic accuracy is deemphasized in favor of an accumulative iconography of typicality, a trope that resurfaces in contemporary nonfiction VR. Accuracy of scale matters less than the spatial prominence of regional

6 John Wyatt Greenlee and Anna Fore Waymack, "Thinking Globally: Mandeville, Memory, and Mappaemundi," *Medieval Globe* 4, no. 2 (2018): 71.

7 For a history of portolan charts, see Tony Campbell, "Portolan Charts from the Late Thirteenth Century to 1500," in *The History of Cartography*, vol. 1, *Cartography in Prehistoric, Ancient, and Medieval Europe and the Mediterranean*, ed. J. B. Hartley and David Woodward (Chicago: University of Chicago Press, 1986), https://www.press.uchicago.edu/books/HOC/HOC_V1/Volume1.html.

tribal leaders who, armed with weapons and shields, stand poised to fend off invaders. These figures appear larger than the wildlife, as big or bigger than the cities and often represented as if frozen in action. Similarly, the palm trees and clumps of vegetation sprouting next to the feet of the animals not only unify the space but code it as habitable and capable of supporting a diverse ecosystem.

Toponymic information competes with the visual for our attention in this portolan chart, the pictorial drawing our eye away from the coastal edges toward the open interior, not unlike what we imagine lies beyond VR's entombed dome.[8] Oriented vertically toward the crucifixion at the top of the map, the coastline of the Mediterranean, Western Europe, Scandinavia, Africa, and the Middle East are positioned horizontally, suggesting that either the map or the human body must move in order for one to read the toponyms.[9] This provocation to alter one's body in space around the Oliva map aligns the portolan's embodied mode of spectatorship with VR; not only does it overcome cartography's sensory deficits by alluding to the physical nature of travel, but the visual vignettes entrust the reader's imagination with authoritative agency in the same way that VR makes viewers believe that our projection into the humanitarian space of crisis derives from the indexical power of the image and heightened sense of immersion. This agency is illusionary, though, since both the VR user and map viewer are inoculated from any actual threat, becoming vicarious witnesses to disaster or danger, and in the case of the medieval map that compels its viewers to walk around it, less bodily immersed than bodily *engaged*. The details construct an idea of place drawn more from the cultural imagination—what Helen Jackson calls "the poetics of lived space"—than an instrumentalized charting of the world.[10] Maps and VR are both in the virtual transportation business, exporting "the parlor to the field site and transforming the latter into an open-air museum," to quote C. Nadia Seremetakis.[11] Placing the Latin Christian world at the map's center, embodied by the imagined European spectator, is a intriguing corollary to VR's own omniscient, humanitarian witness. Substitute the parlor for the VR headset, and we have a perfect description of the looking relations of the *Nomads* VR experience.

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8   For more on the role and different types of cartographic signs found in medieval maps, see Catherine Delano-Smith, "Cartographic Signs on European Maps and Their Explanation before 1700," *Imago Mundi* 37 (1985): 9–29.

9   According to Richard Pflederer, portolan charts were drawn onto the skin of a sheep (or a cow), the dimensions determined by the size of the animals, typically a meter wide and half as long and wide. The animal's neck, which was retained, provided space for either the author's inscription, the crucifixion, or some other image. Richard Pflederer, "Portolan Charts: Vital Tool of the Age of Discovery," *History Today* 52, no. 5 (May 2002): 20.

10 That being said, the southern European knights and North African tribal leaders with weapons drawn might have supplied the map user with useful intelligence about regional rulers. Helen Jackson, "Embodiment, Meaning, and the Augmented Reality Image," in *Image Embodiment: New Perspectives of the Sensory Turn*, ed. Lars C. Grabbe, Patrick Rupert-Kruse, and Norbert M. Schmitz (Darmstadt, Germany: Büchner-Verlag, 2016), 212.

11 C. Nadia Seremetakis, "The Memory of the Senses: Historical Perception, Commensal Exchange and Modernity," *Visual Anthropology Review* 9, no. 2 (Fall 1993): 13.
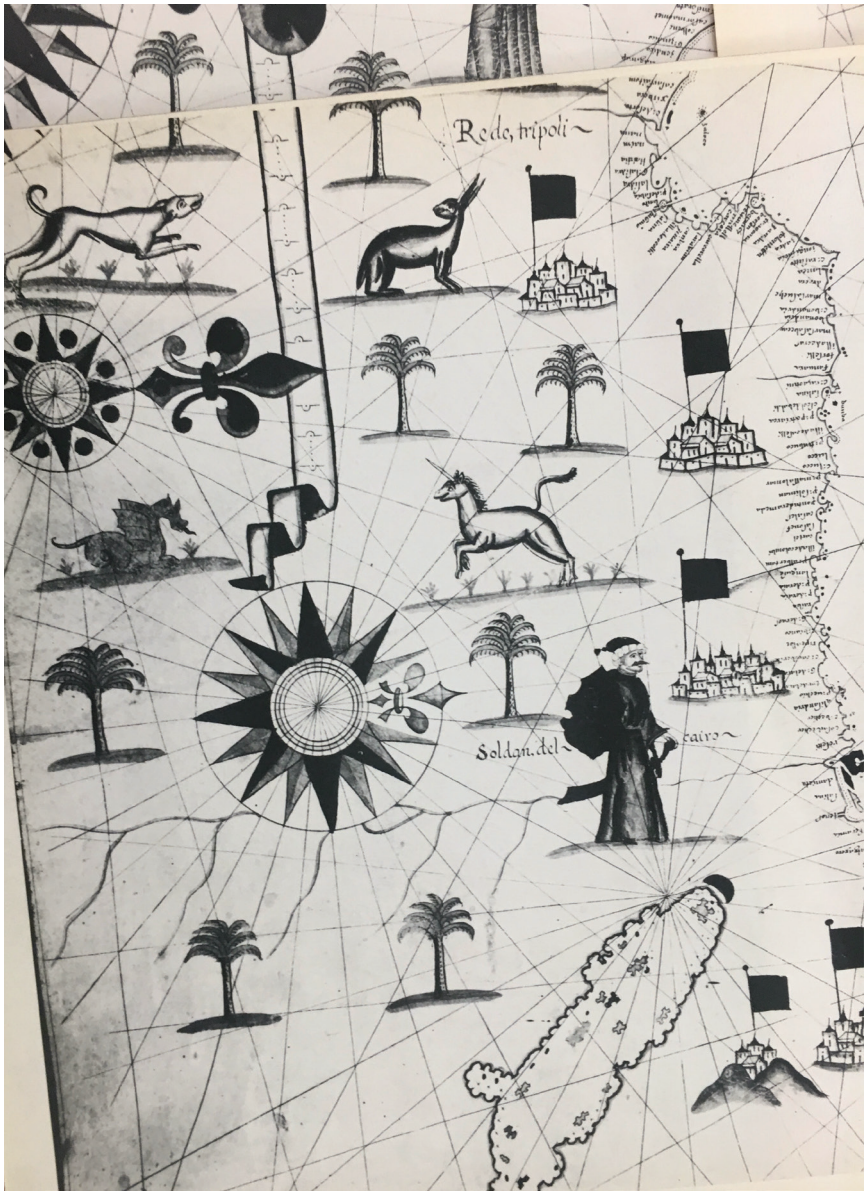
Figure 1. Portolan chart detail showing the northern coast of Africa (modern-day Libya, oriented sideways) and pictograms of real and imaginary animals. HM 40, Johannes Oliva, Italy, 1602, parchment, 32 rhumb line network. The Huntington Library, San Marino, California.

With the production values of a *National Geographic* special, the user-friendly human-interest appeal of a Margaret Mead Film Festival selection, and the social justice–based journalism of humanitarian VR, the *Nomads* trilogy exploits virtually every feature in the 360-degree VR toolkit. As a composite experience enlisting the signifying practices and ontological rubrics of cinema, gaming, theatrical performance, journalism, and large-format photographic installations, *Nomads* is exemplary in foregrounding several basic tenets of VR as a site-specific, geo-imaginary phenomenon. First, it constructs an uncanny sense of co-presence, similar to theater's breaking of the fourth wall, although unlike in theater, there's no collective shared experience but rather a pervasive sense of spectator isolation. Despite being stared at for what seems like an eternity at the start of *Maasai* (with no direct address), we stare back as if through the glass of a museum diorama. Stimulated by the heightened sense of the uncanny but unable to dislodge the sensation of being an interloper, we are eager to respond to social cues that invite more meaningful interaction but are unable to move save turn our bodies in endless circles to see what's behind us. Thus, we become so self-conscious of our looking—at least in my experience—that an intruder syndrome sets in, a feeling of having been dropped into another world. But how does this relate to the portolan chart's obviously less visceral sense of immersion?

First and foremost, it's important to recognize that immersion is not an all-or-nothing experience but rather, as Doug Bowman and Ryan McMahan argue, "a combination of many components . . . [along] a multidimensional continuum."[12] Given that presence encompasses such features as perceived social reality and pictorial realism, which are palpable even in such mediated forms of communication as reading a book, users of the HM 40 portolan chart might very well have perceived the bodies of people and wildlife on the surface of a map as an envisioning of what might be found there. As devices for an imaginary projection into virtual space, portolan charts and world atlases trigger something closer to a broad psychological definition of *presence* as "inner presence," akin to how we "sense" characters when reading a novel, rather than the notion of VR as an innately less mediated technology.[13] The logic of staring is also built into the viewing protocols of HM 40, as the reader's eye lands on each of the human figures, studying its pose, gesture, and attitude.

The *Vallard Atlas* is a stunning example of the visualization of geo-ethnographic information in the early modern period, a re-imagining of cartography beyond the limits of toponyms into an entirely new realm of the ethnographic imaginary (Figure 2). In the maps of India, Asia, the Malay Archipelago, and the northern coast of Australia represented in folio 2,

12 Doug A. Bowman and Ryan P. McMahan, "Virtual Reality: How Much Immersion Is Enough?," *Computer* 40, no. 7 (July 2007): 39. For a review of literature on presence and definitions of physical, social, and self-presence, see Kwan Min Lee, "Presence, Explicated," *Communication Theory* 14, no. 1 (February 2004): 27–50, https://doi.org /10.1111/j.1468-2885.2004.tb00302.x.

13 For more on the idea of presence as an evolved neuropsychological process, see Alessandra Gorini et al., "The Role of Immersion and Narrative in Mediated Presence: The Virtual Hospital Experience," *Cyberpsychology, Behavior, and Social Networking* 14, no. 3 (2011): 100, https://doi.org/10.1089/cyber.2010.0100.
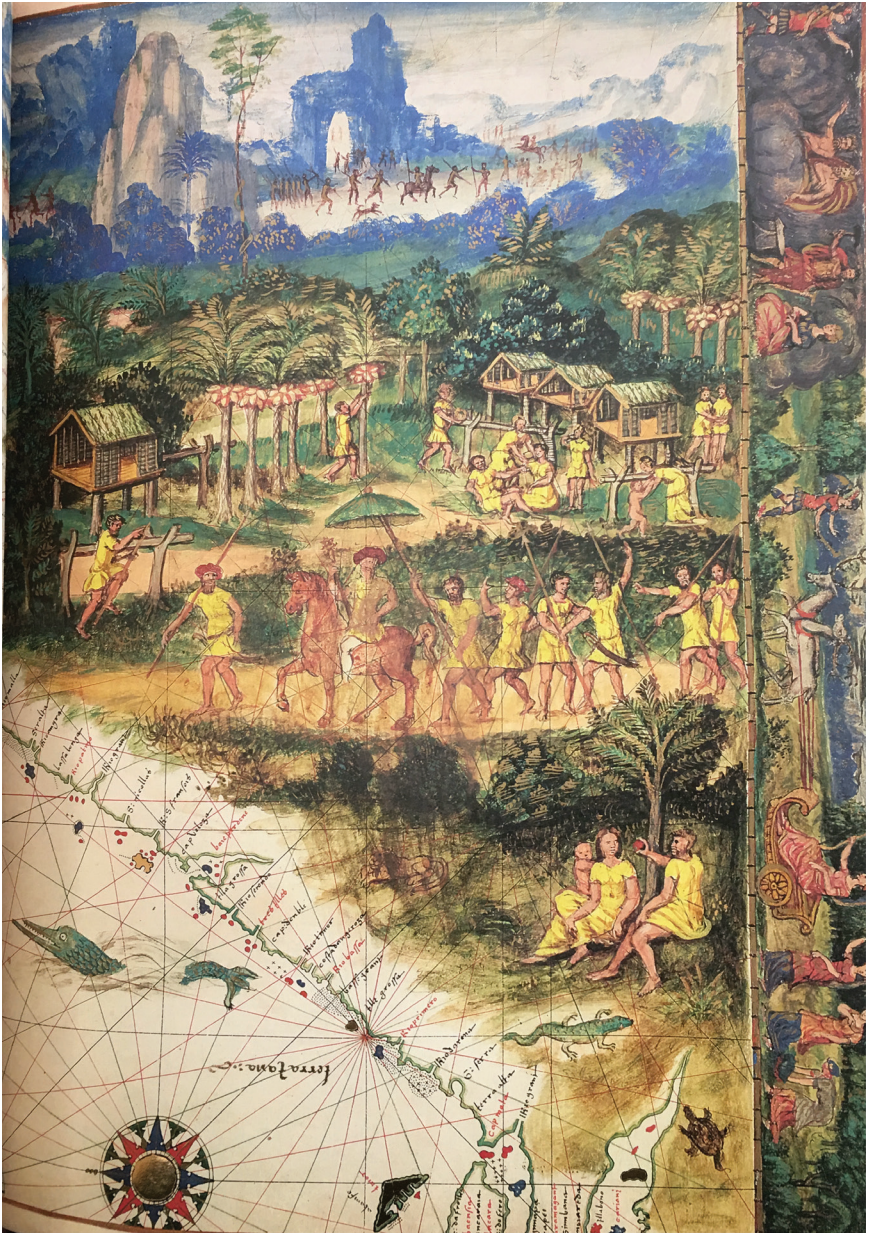
Figure 2. *Vallard Atlas*, representing the East Coast of Australia, a disputed continent at the time. Dieppe School, unknown author, 1547. The Huntington Library, San Marino, California.

the lower edge of the map depicts a verdant land and home to Indigenous people who look noticeably different from the Europeans in the western part of Australia in the first folio. In both maps, however, figures of action are juxtaposed with figures in moments of intimacy and relaxation, and distance is connoted via the size of the images. Thus the *Vallard Atlas* elevates mapping as visual spectacle above its utility as geographic survey. The eschewal of cartography's toponymic fixity opens up possibilities for a far more sensory engagement with people qua people; the framing device of the map permits a form of emotional geography, a drawing of the self into space through the unleashing of narrative possibilities. The omniscient gaze of the map's spectator is transubstantiated for a different kind of spectatorial experience in which the user has control over the object and can choose if and when to look at another map.

The crucial question here is whether being immersed in a non-real space, cartographic or technologically mediated, helps us better appreciate cultural difference and humanitarian plight or whether presence, immersion's visceral penumbra, is so compelling that our sense of wonder or shock in the case of human suffering in humanitarian VR leaves little space for intellectualization of root causes. Courtney Baker's counter-model of "humane insight" is a useful rejoinder to the empathy machine ballyhoo surrounding humanitarian VR. Baker defines this insight as a look that explicitly acknowledges the humanity of the person being looked at rather than simply gazing at them as humanity spectacularized. Regarding race and the ethics of the gaze, Baker argues that looking is always an active gesture and that humanity can never be imagined in some absolutist sense, neither visually nor verbally. Her work challenges us to think about the history of cartography and VR as opportunities for self-monitoring our feelings, for being mindful of our reactions to the hyperbole around VR as a so-called compassionate technology.[14] Similarly, media theorist Roger Silverstone's theory of "proper distance" interrogates how mediation produces attitudes of belief and ethical awareness in the representation of humanitarianism. Silverstone thus brings a much-needed critical lens to VR's polyvalent mode of address and, by extension, the history of cartography.[15]

The creators of medieval portolan charts and atlases were experimenting with cartographic form in ways that evoke contemporary debates about VR as a nonfiction storytelling device. But whereas the fate of the portolan chart was sealed once use value trumped decorative figuration, VR developers are still trying to locate its killer app. Following *National Geographic*'s visual rhetoric, they venture into the realms of expedition cinema, photojournalism, and humanitarian video, terrain that, while relatively novel for the medium, has a

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14 Courtney R. Baker, *Humane Insight: Looking at Images of African American Suffering and Death* (Champaign: University of Illinois Press, 2015), 5, 8–9; for more on the empathy debate and VR, see Lisa Nakamura, "Feeling Good about Feeling Bad: Virtuous Virtual Reality and the Automation of Racial Empathy," *Journal of Visual Culture* 19, no. 1 (2020): 47–64, https://doi.org/10.1177/1470412920906259.

15 Roger Silverstone, "Proper Distance: Towards an Ethics for Cyberspace," in *Digital Media Revisited: Theoretical and Conceptual Innovations in Digital Domains*, ed. Gunnar Liestøl, Andrew Morrison, and Terje Rasmussen (Cambridge, MA: MIT Press, 2003), 469–490.

fascinating history in medieval cartography. The embodied viewing protocols of medieval *mappae mundi* and portolan charts tie these hybrid cartographic experiences to humanitarian VR in fascinating ways, through a shared philosophical interest in projecting the reader or viewer into the geographic lifeworlds of Others.

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Christian Rossipal

War and Humanitarian Aesthetics: Notes on Modular Immersion

In 2009, Swiss ex-artillery officer Christian Rouffaer, working for the International Committee of the Red Cross (ICRC), was tasked with documenting war crimes committed in video games, in a research project called "Playing by the Rules."[1] Rouffaer found that human rights law was frequently violated in games such as *Call of Duty* (Infinity Ward, 2003). This discovery was mocked in the press, with reporters declaring that the Red Cross was out to incite moral panic, could not distinguish between fiction and reality, and had "virtually lost the plot."[2] Bad press aside, the outcome of this rather bizarre episode is interesting if we consider how virtual reality (VR) and so-called gamification would later become key to the organization's media strategy, which lets us examine the convergence of humanitarian governance and immersive media.

To shift the sudden media attention to their favor and reach new target groups, the ICRC collaborated with Bohemia Interactive on the first-person shooter game *Arma 3* (2013), which simulates infantry warfare taking place in the near future on the islands of the Aegean Sea. The collaboration generated a new add-on for the game *Laws of War* (Bohemia Interactive, 2017), in which the player takes on the role of an international humanitarian aid worker instead of a soldier. Working for the fictional ICRC surrogate "Inter-

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1   Charlie Hall, "How the International Red Cross Turned a PR Disaster into DLC," *Polygon*, September 19, 2017, https://www.polygon.com/2017/9/19/16330216 /international-red-cross-pr-disaster-arma-3-laws-of-war-dlc.

2   Chris Berg, "How the Red Cross Virtually Lost the Plot," *Sydney Morning Herald*, December 18, 2011, https://www.smh.com.au/politics/federal/how-the-red-cross -virtually-lost-the-plot-20111217-1p05x.html.

national Development and Aid Project," the player is tasked with clearing mines and cluster munition in the aftermath of a bombing campaign. The goal, according to the collaborators, is to foster a better understanding of international humanitarian law (IHL).

Bohemia Interactive is currently licensing a military-grade version of the underlying *Arma* game engine for VR training in the US Army and other military organizations around the world, where immersive media are widely used for training before deployment and to treat soldiers after they return (e.g., for post-traumatic stress disorder).[3] As Pasi Väliaho puts it, such military training and treatment function as a "merger between computer-generated imagery, biological psychology and the management of affectivity and memory, based on the foundational idea that affective responses and behavioral patterns are interiorized in the organism's neurophysiological circuits."[4] Väliaho further explains that military immersive media have less to do with embodiment or emotional responses on an individual level than with biopolitical governance on a collective level. In other words, the military's primary investment in immersive media is not curing individual soldiers of their trauma but rather managing how affective and behavioral patterns are distributed across a population. As we will see, immersive media from humanitarian organizations operate within this biopolitical domain too.

In 2018, the ICRC turned to immersive media for fundraising and advocacy, hoping to raise awareness and build empathy. To date, two immersive works funded by the ICRC have been released for download on mobile app stores: the interactive VR short film *The Right Choice* (Avril Furness, 2018) and the augmented reality (AR) app *Enter the Room* (Nedd, 2018). Based on the ICRC report on urban warfare, "'I Saw My City Die': Voices from the Front Lines of Urban Conflict in Iraq, Syria and Yemen," *Enter the Room* transforms the user's cell phone into a kind of portal: a three-dimensional doorway leading into a child's bedroom. Seeing the steady decay of the room and hearing air-raid sirens from outside, the user indirectly gleans the human costs of war.

Whereas *Enter the Room* does not show any humans onscreen and lets its user imagine the horrors of war, *The Right Choice* portrays both people and violence up close. Shot in Beirut using a war-damaged building as a set, the film includes staged but profoundly disturbing imagery. By consulting and casting Syrian refugees now resettled in Beirut, the filmmakers were able to achieve seemingly impeccable attention to detail and realism that is further emphasized through the film's high production value. *The Right Choice* depicts a Syrian family in their home while urban warfare unfolds right outside their building. Specifically, a man sweeps the floor in a ground-level apartment as his wife and their two young kids sit on a rug, doing daily chores. We observe the wife sewing and the children doing their homework until, suddenly, a bullet comes through the window and

3   Charlie Hall, "How the 101st Airborne Trains in Virtual Reality," *Polygon*, October 7, 2014, https://www.polygon.com/2014/10/7/6934741/how-the-101st-airborne-trains-in-virtual-reality.
4   Pasi Väliaho, "Affectivity, Biopolitics and the Virtual Reality of War," *Theory, Culture & Society* 29, no. 2 (March 2012): 66.

into the father's shoulder. The video freezes, and the viewer is asked to click "hide" or "run." If they opt to run, they discover this option is futile. The father collapses, a burst of live rounds penetrates the building, and the family panics and flees into another room. We soon hear gunshots in the distance, and the kids run back to the first room alone, where the VR camera has remained. Their return implies that both parents have been shot. The viewer is able to go back to make a different choice, but the outcome is nonetheless tragic. The piece ends with the statement: "For millions in warzones there is no right choice."

This simple, even banal, message is delivered in a straightforward way, but it is less clear why the ICRC would want to produce a shocking video to underscore such a point. What exactly is the purpose of investing in expensive VR technology and computer-generated imagery, such as glass that shatters in slow motion when the father is shot? Is it because a more conventional documentary image is not, as Susan Sontag puts it, "fearsome enough, and therefore needs to be enhanced; or reenacted more convincingly" to provoke empathy?[5] Christopher Nicholas, the ICRC's project lead on *The Right Choice*, seems to imply that this is indeed the case: "Virtual reality transports viewers from the comfort of their homes to the horrors of the battlefield in a visceral and powerful way. This film asks: What would you do if you came under attack? . . . We wanted to create a short and dramatic experience that was still compelling and realistic. We want people who aren't familiar with urban conflict to get a sense of what it looks and feels like."[6]

The tropes of *visceral*, *powerful*, and *compelling* experience are familiar for those studying the field of contemporary humanitarian aesthetics. The creative agency behind *The Right Choice* uses even more pointed language in their short synopsis: "Many don't realise that those living in conflict-affected cities are left without a choice. So we created a *shocking* VR film, dropping viewers into a home in the middle of a besieged city."[7] The piece is indeed shocking and effective in the sense that it slowly draws viewers in to then catch them off guard with the sudden shot through the window. This approach can be insidious, however, as the shock becomes familiar or wears off. As Sontag notes, even if images continue to shock, "they are not much help if the task is to understand."[8] Instead, they might induce secondary traumatization or "compassion fatigue."[9] While some empirical evidence suggests that shocking immersive media might be effective for fundraising or to temporarily spotlight an issue, Mary Anne Franks convincingly argues that "constant media coverage of human suffering does not provide the hoped-for antidote to human indifference; rather, it entrenches it. . . . Virtual reality not only provides society with the ability to view atrocities in realistic and compel-

5   Susan Sontag, *Regarding the Pain of Others* (London: Penguin, 2004), 82.
6   "War at the Front Door: A Virtual Reality Challenge inside Urban Conflict," ICRC, October 22, 2018, https://www.icrc.org/en/document/war-front-door-virtual-reality-challenge-inside-urban-conflict.
7   "The Right Choice," Don't Panic, accessed November 7, 2020, https://www.dontpaniclondon.com/project/the-right-choice/ (emphasis mine).
8   Sontag, *Regarding*, 117.
9   Mary Anne Franks, "The Desert of the Unreal: Inequality in Virtual and Augmented Reality," *UC Davis Law Review* 51, no. 499 (2017): 516–517.

ling detail; it provides the opportunity to view such atrocity over and over, on an endless loop."[10]

The idea of creating immersive images in the context of war is nothing new, of course, even if the technology and devices might be. In 1899, the second president of the ICRC, Gustave Moynier, noted, "We now know what happens every day throughout the whole world . . . the descriptions given by daily journalists put, as it were, those in agony on fields of battle under the eyes of [newspaper] readers and their cries resonate in their ears."[11] The notion that media consumers could know what happens "every day throughout the whole world" was a notable exaggeration, but Moynier's underlying assumption is telling. As Sontag puts it, "For a long time some people believed that if the horror could be made vivid enough, most people would finally take in the outrageousness, the insanity of war."[12] Indeed, this seems to still be the guiding assumption of the ICRC.

The ICRC conceived *The Right Choice* as an early test to find out if interactive media "has the potential to change someone's perception or incite behavioral change."[13] To get feedback, the ICRC conducted their own internal research in the form of pre- and post-viewing surveys. Responses from over five hundred completed surveys indicated viewers' heightened sense of "concern" directly following *The Right Choice,* but the final results were never published in an official research report because of the difficulty of deducing general conclusions.[14] Both the survey responses and the ICRC's hesitation to draw conclusions echo the findings of empirically oriented VR scholars, who lament the lack of research on longitudinal change, implicit attitudes, and other factors that might skew survey results.[15]

Much has been written about (im)proper distance, voyeurism, and the ethically flawed notion of VR inherently being an empathy machine.[16] In addition to such issues, however, the ICRC actualizes the less examined idea of directly modulating behavior with humanitarian immersive media—the behavior of both those who witness from a distance and those who live or work in war-torn regions. The ICRC is currently researching how immersive media can be used as a tool for behavioral change, not only with public-facing projects like *The Right Choice* but also internally.[17] While the aim with the former is mainly to increase donations and to affect public engagement and policy-making, the latter has to do with operational uses such as training for the field and educating militaries.

10 Franks, 517.
11 Cited in Sontag, *Regarding*, 27.
12 Sontag, 21, 82.
13 "War at the Front Door."
14 From the author's email exchange with Christopher Nicholas at the ICRC, October 22, 2020.
15 Mila Bujić, Mikko Salminen, Joseph Macey, and Juho Hamari, "'Empathy Machine': How Virtual Reality Affects Human Rights Attitudes," *Internet Research* 30, no. 5 (2020): 1407–1425.
16 Franks, "Desert of the Unreal," 509–514.
17 "ICRC Researches Virtual Reality as a Behavior Change Tool," ICRC, June, 29, 2019, https://blogs.icrc.org/inspired/2019/06/29/virtual-reality-tool-influence -behaviors/.

Other international humanitarian actors—including the United Nations High Commissioner for Refugees, Amnesty International, and Médecins Sans Frontières (Doctors Without Borders)—have sponsored VR productions similar to *The Right Choice*, but the ICRC is quite unique in that it has not only commissioned VR works but also built its own production facilities. The ICRC founded a dedicated Virtual Reality Unit in 2013, headed by Rouffaer. A central aim of the unit is to develop virtual environments with more efficient gamification for the training of new ICRC personnel, but they also use immersive media to educate warring groups on international law. ICRC delegates bring 3D renditions to meetings with armed factions and authorities in order to show evidence of possible violations and to educate on international treaties like the Geneva Convention.

Other humanitarian projects, such as Building Resilience Through Heritage (BReaTHe), created by the University of Bradford in partnership with the global aid organization Mercy Corps, use strategies similar to those of the ICRC and bring immersive media technology to populations affected by war. BReaTHe notably uses virtual reality as part of "psychosocial programming" for Syrian refugees: the project aims to help refugees create a cultural connection to their war-torn homeland, enhance mental well-being, and build "personal and societal resilience" using 3D models along with immersive photography and video.[18] When the VR equipment is brought to camps in Jordan, refugees can enter virtual museums or visit locations and see landmarks now destroyed.

While BReaTHe underwent a rigorous ethical approval process, consulted with local stakeholders, and offered psychosocial support from trained professionals on-site, other immersive media risk re-traumatizing precarious populations directly affected by war.[19] Regardless of their creators' laudable intentions, then, scholars need to carefully trace the wider biopolitical ramifications of such humanitarian interventions. Projects such as BReaTHe and those of the ICRC compel us to construct a critical and ethical framework that takes into account not only the representation of the distant, suffering other in humanitarian immersive imagery but also the ways in which immersive media are used for behavioral change and governance. As Väliaho argues, the governing function and potential "violence of this imagery may indeed originate not so much in what the images show but in their modular nature."[20] This kind of modular immersion (adaptive, modulatory, and cybernetic) could be compared to what Michel Foucault called "environmental intervention," which is to say, a mode of power that shapes the behavior and regulates the conduct of individuals by "modifying their adaptive and self-organizing capacities and conditions."[21]

18 "How Virtual Reality Is Helping Refugees in Jordan and Beyond," University of Bradford, June 18, 2019, https://www.bradford.ac.uk/news/archive/2019/how-virtual-reality-is-helping-refugees-in-jordan-and-beyond.php.
19 Franks, "Desert of the Unreal," 516.
20 Väliaho, "Affectivity, Biopolitics," 81.
21 Foucault cited and discussed in Pasi Väliaho, *Biopolitical Screens: Image, Power, and the Neoliberal Brain* (Cambridge, MA: MIT Press, 2014), 46.

In the context of immersive media and gamification, the process of environmental intervention involves a dual movement: environments are incorporated into the viewer's consciousness at the same time that their mind-body is being incorporated into the environment.[22] According to Väliaho, the key battleground in the context of immersive media and warfare concerns the brain's reality emulation, not "interpretation of the external world but, rather . . . the media technological regulation of basic affect programmes and the endogenous imagery they produce."[23] In other words, the governing function of immersive media is to a large extent independent from symbolic depiction and even individual cognition. To that end, operational (re-)training in the military seeks to bypass higher faculties and targets a pre-linguistic and non-representational level of mind-body inscription.[24] By aiming to shock, change behavioral patterns, and psycho-socially reprogram users of immersive media, humanitarian organizations are increasingly operating within this domain too.

With the brain as primary target of intervention and capture, neural plasticity becomes a central focus of governance under neoliberal societies of control. Much like the dual incorporation of immersive media, neural plasticity involves "a process through which the nervous system adjusts to changes in the internal and external milieu."[25] In the context of war—particularly the sheer violence and shock it generates—the brain is subjected to a "destructive plasticity" that can radically alter the constitution of the subject.[26] Destructive plasticity is not limited to war zones, however; some scholars argue that the neoliberal cerebral subject is constantly underpinned by and subjected to "the forces of metamorphosis, destruction—and death."[27] Immersive humanitarian media under neoliberalism are likewise entangled with the biopolitical emergence of life as well as the necropolitical "subjugation of life to the power of death."[28]

Under neoliberal governance—and, in particular, when liberal nation-states wage war—biopolitics and necropolitics cannot be separated. Even if the purported mission of a military organization is construed as humanitarian and peacekeeping, "[p]eace becomes the extension of war through the discourse of security," as Michael Dillon explains.[29] According to Dillon, this implies that "[l]iberal peace is a necropolitics of security which makes permanent war against life on behalf of life."[30] By extension, humanitarian

22 See Gordon Calleja, *In-Game: From Immersion to Incorporation* (Cambridge, MA: MIT Press, 2011), 169.
23 Väliaho, "Affectivity, Biopolitics," 76.
24 Väliaho, 69, 77.
25 Warren Neidich, "From Noopower to Neuropower: How Mind Becomes Matter," in *Cognitive Architecture: From Bio-Politics to Noo-Politics*, ed. Deborah Hauptmann and Warren Neidich (Rotterdam: 010 Publishers, 2010), 547.
26 See Catherine Malabou, *Ontology of the Accident: An Essay on Destructive Plasticity*, trans. Carolyn Shread (Cambridge: Polity Press, 2012).
27 Väliaho, "Affectivity, Biopolitics," 84.
28 Achille Mbembe, "Necropolitics," trans. Libby Meintjes, *Public Culture* 15, no. 1 (Winter 2003): 39.
29 Michael Dillon, "Security, Race and War," in *Foucault on Politics, Security and War*, ed. Michael Dillon and Andrew W. Neal (Basingstoke: Palgrave Macmillan, 2008), 176.
30 Dillon, 177.

organizations also operate within the general necropolitical domain, which itself is intimately tied to neural plasticity and "neuropower."[31]

If we consider the ICRC or BReaTHe in light of the complex interrelations outlined above—between humanitarianism, biopolitics, necropolitics, and neural plasticity—it becomes clear that what is at stake is not merely the image of the suffering other, or even representational politics more broadly. Rather, these organizations operate in a sphere of political physiology in which the boundary between the political and the somatic is blurred. The mind-body is the primary locus of mediation and target of capture. Much like in the military, the objective is to change affective and behavioral patterns. Regardless of the good intentions of humanitarian organizations, this warrants a careful attention to new forms of power. Consequently, humanitarian immersive media pertaining to war necessitate a renewed media critique that considers operational aspects and that dispenses with dualist conceptions of mind and body, that goes beyond representational politics to take into account the entanglement of images, media, and bodily matter(s).

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31 Neidich, "From Noopower to Neuropower," 545–546.

Eszter Zimanyi and Emma Ben Ayoun

Virtually Wandering the *Migration Trail*

On November 20, 2017, artist and architect Alison Killing launched a ten-day-long, web-based multimedia narrative addressing Europe's so-called migrant or refugee crisis. Billed variously as documentary, journalism, and interactive storytelling, Killing's project, titled *Migration Trail*, draws upon data visualizations, maps, and social media to recreate the journeys of two fictionalized irregular migrants: Sarah, a nineteen-year-old Syrian woman, and David, a thirty-year-old man from Nigeria.[1] In separate storylines, these two characters make their way to Europe via the Eastern and Central Mediterranean routes, respectively.[2] Sarah's and David's experiences are visualized on a two-dimensional map of the world. Their stories unfold through written text messages sent by the characters to their loved ones through Facebook Messenger.

Each day, *Migration Trail*'s users are pinged with updates from Sarah or David on their web browsers and cell phones and can check the virtual map to see where either character is at any given moment. The characters' progress, however, feels decidedly slow. Sarah's and David's movements adhere to the length of time migration journeys take in reality; for example, it takes one hour and fifty minutes of *Migration Trail*'s run-time for Sarah to cross by

1   The project can be experienced at https://www.migrationtrail.com. The International Organization for Migration defines "irregular migration" as the "movement of persons that takes place outside the laws, regulations, or international agreements governing the entry into or exit from the State of origin, transit or destination." See "Key Migration Terms," International Organization for Migration, accessed September 15, 2021, https://www.iom.int/key-migration-terms.

2   The Eastern Mediterranean route takes migrants from Turkey to Greece. From here, many migrants and refugees seek to continue their journeys toward Western Europe either by connecting to the Western Balkan route (a land route that traverses Southeastern and Central Europe) or, if they have the means, by flying to their desired destination country. The Central Mediterranean route takes migrants and refugees from North Africa to Italy.

boat from Izmir, Turkey, to Lesbos, Greece. Similarly, if the characters spend a night at a squat or safe house, they remain in place on the map for seven to eight hours. If they are sleeping, they likewise do not send messages to their family members. As users, we find ourselves suspended in wait during these communicative gaps; at times, the project easily fades into the background of our daily lives, and at others, rapidly arriving messages thrust *Migration Trail*'s narrative back into our consciousnesses. While the user is able to rewind *Migration Trail* to revisit an earlier point in time, they cannot fast-forward or speed up the characters' journeys.

Killing argues that her refusal to condense the project's run-time makes its narrative more "urgent and immediate" than traditional documentaries and news reports, because *Migration Trail*'s viewers "find out about events right as they're happening."[3] This insistence on making humanitarian crises ever-more urgent and immediate for distant viewers pervades both documentary and immersive media practices. As Pooja Rangan cogently argues, documentary filmmaking grew out of a "modern ethical imaginary [of] emergency thinking" that "institutes a humanitarian order of priorities in which saving endangered human lives takes precedence over all other considerations" and favors "action over thinking, ethics over aesthetics, and immediacy over analysis."[4] Emergency thinking similarly undergirds the growing number of interactive and virtual reality (VR) experiences that aim to immerse participants within crisis situations—whether they be war zones, attempted illegalized border crossings, or scenes of police brutality—in order to elicit emotional and bodily reactions.[5] Yet, despite Killing's claim, *Migration Trail* eschews many of the formal, aesthetic, and narrative choices that would instigate emergency thinking.

Therefore, in this essay, we choose to think against Killing's framework to ask what her project makes possible by way of its slowness and limited interactivity. We read *Migration Trail*'s attempts to incorporate itself into the daily rhythms and screen habits of its users as a provocative re-thinking of media immersivity, one that opens a new set of questions around spectatorship, participation, and temporality in humanitarian media. The felt experience of media boundaries, their appearances and dissolutions, takes on a new resonance in immersive media with humanitarian aims. This is particularly true when the humanitarian crisis being represented involves another set of boundaries and their bodily effects, such as national borders and the myriad other socioeconomic barriers, both visible and invisible, that migrants and refugees face worldwide. Killing's multi-platform digital

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3 Allison Meier, "An Interactive Story Follows Two Migrants on Their Journeys to Europe," *Hyperallergic*, December 7, 2017, https://hyperallergic.com/413919 /migration-trail-online-interactive-story/.

4 Pooja Rangan, *Immediations: The Humanitarian Impulse in Documentary* (Durham, NC: Duke University Press, 2017), 3.

5 Eszter Zimanyi and Emma Ben Ayoun, "On Bodily Absence in Humanitarian Multisensory VR," *Intermédialités: Histoire et théorie des arts, des lettres et des techniques (Intermediality: History and Theory of the Arts, Literature and Technologies)*, no. 34 (Autumn 2019): https://doi.org/10.7202/1070876ar. See also Mandy Rose, "The Immersive Turn: Hype and Hope in the Emergence of Virtual Reality as a Nonfiction Platform," *Studies in Documentary Film* 12, no. 2 (2018): 132–149, https:// doi.org/10.1080/17503280.2018.1496055.

narrative attunes users' bodies to the temporalities of irregular migration. By delimiting and refusing users' direct participation in shaping Sarah's and David's actions, it also allows for an ongoing encounter with migrant subjectivities that instigates what Aggie Ebrahimi Bazaz, in this dossier, describes as a critical, reflexive immersion.

Though *Migration Trail* is advertised as an immersive experience, it does not physically envelop its participant through a headset, nor does it dominate the environment in which it is situated, as large-scale immersive installations do. The project does not inherently demand total absorption or any specific activity on the part of the user. *Migration Trail*'s interactive map is accompanied by eleven, supplementary podcast episodes exploring the experiences of contemporary refugees and migrants in further detail. There are no steps or decisions participants must take to move through the narrative; rather, the map dutifully updates throughout each day regardless of how often one chooses to open it. The characters, Sarah and David, are represented as small, circular data points that inch slowly across the map, trailed by a dashed line that tracks their movements from place to place. They thus remain visually abstracted throughout the experience; we never see Sarah or David in embodied form, nor are we shown any photographic or video material of the places they transit through. In this way, the project refuses the lure of gameplay, the ideology of intervention, and the voyeurism of the twenty-four-hour news cycle that broadcasts dramatic footage of migrants in distress on loop for distant viewers to consume.

In a panel on the right-hand side of the map, we are provided background information and data about a chosen character and their environment: we can see their cell phone battery life change throughout the day, the speed and method by which they are traveling, their last known location, and their direction of travel. This data is individualized and narrativized through the character's messages, which are logged within the same informational panel. The text messages are also visually represented as notification bubbles on the map, such that each time the character sends an update, geographic locations are marked with the number of communicative actions the character makes at that site. Clicking on these message bubbles brings up the texts sent from that location, so that areas of the map are inscribed with different emotional registers relayed by the character, be they excitement, fear, worry, or relief.

Migration Trail builds suspense through unpredictable patterns of communication from its characters. Sarah's and David's ability to send texts depends on their access to mobile and Wi-Fi service. As a result, the characters sometimes go silent for hours, reflecting the gaps in connectivity real-world migrants experience. The project shows us only one side of their conversations; we receive Sarah's and David's messages but not their family members' responses, leaving us guessing as to how often their family members may be trying to make contact. Sarah and David are often apologetic in this regard, explaining they had no service or hid their phone for safety. In this way, *Migration Trail* attunes our bodies to the shifting sensations of waiting and uncertainty experienced by both migrants and the loved ones from whom they are separated. The project inserts itself into users' routine

practices of checking their phones for text messages and generates gradually increasing anxiety with its slowness. The longer Sarah and David go without sending an update, the more likely it is that users feel compelled to repeatedly, and futilely, refresh *Migration Trail*'s map.

Once the experience begins, the site consistently updates itself over the allotted ten days, even if the user closes the project's associated browser window. As users, we find ourselves habitually returning to the map to search for new information as we wait for Sarah and David to send updates, despite there being, or perhaps because there is, no way for us to reach out to or converse with these characters. We check on their progress by moving our cursors across the map, exploring the shifts in our characters' environments and emotions. Our interaction with the project is limited to zooming in and out of the frame. Doing so reveals new layers of data, from wind speeds at sea and the level of internet connectivity in any given area to information about common migration routes to Europe, travel restrictions and visa requirements, and the specific locations of reported migrant deaths at sea. Moving within the map also activates sonic elements that enhance *Migration Trail*'s claim to immersivity. Zooming all the way into the character's location reveals sounds that the character hears, from the lively chatter and clanking of pans in the kitchen at dinnertime to the heartstopping soundtrack of ocean waves pounding against a rubber dinghy and a coast guard helicopter flying overhead during an unauthorized sea crossing. Though *Migration Trail* refuses to reproduce the kinds of graphic images of trauma and mass death that viewers have grown accustomed to seeing in news and documentary footage, the characters' text messages are deeply intimate, sensorially rich, and evocative. David's texts to his brother, for example, frequently reflect the weight of trauma on his body: he reports that he is seized with fear upon seeing the water, recounts the odors and itching that accompany days on end without bathing, and conveys his awareness of his hair and beard growing, his leg swelling, and blisters forming on his feet. Together, *Migration Trail*'s descriptive text messages, sound design, and durational narrative create a compelling and immersive experience that plays with users' expectations about where and how they can participate, and who or what they are entitled to see.

Migration Trail constructs this immersive experience by appropriating the visual form of the tracking map to narrativize statistical data about unauthorized migration to Europe. Its immersivity operates along two axes: duration and infiltration of the user's everyday bodily habits. In her work on geolocative technologies, Brenda Smaill locates the spectatorial pleasures of tracking maps precisely in the act of "repeated and intermittent engagement" rather than total absorption or identification; the interactive map is enjoyable precisely because one leaves it and returns to it.[6] Smaill's objects of study— maps that reflect the movements of sharks and rising sea levels—are certainly different from Killing's, but the tracking of ecological crisis is also meant to

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6   Brenda Smaill, "An Ecocritical Approach to Documentary Interactivity: Spatial Technologies in a Film Studies Frame," *Studies in Documentary Film* 12, no. 3 (2018): 173–189, https://doi.org/10.1080/17503280.2018.1498622.

invoke urgency, the need to act now, and an awareness that it might already be too late. In Smaill's case studies, the mapping of ecological data visually renders emergency by evidencing measurable changes in environments over time: when viewers witness animations of rising sea levels, for example, they understand that coastal cities will soon be underwater. Yet, in humanitarian media focused on people, urgency is most often communicated through first-person accounts of traumatic events, in which victims' testimonies about the horrors they have experienced (attempt to) animate viewers' collective drive to act. What to make, then, of *Migration Trail*'s intentional slowness, its refusal to visually represent its characters as embodied beings, and its denial of direct intervention in its narrative?

Migration Trail's liveness and the urgency of the situations it represents co-exist uneasily with the user's ability, and pragmatic need, to engage and disengage at will. This duality is in some ways reminiscent of the split identified by Elaine Scarry in her work on emergency; in states of emergency, she writes, there is often an "unspoken presumption . . . that either one can think or one can act" and that, because the need for immediate action is what constitutes the emergency as such, "thinking must fall away."[7] For Scarry, this opposition is a false and dangerous one, as it disregards the role that habit plays in forming emergency responses. "Habit," she writes, "yokes thought and action together."[8] Habit thus brings embodiment back into the picture: habit is embodied, pre-reflexive, but also suggestible, subject to change. If we imagine that the user of *Migration Trail* habitually checks their phone throughout the day in response to flickering notifications, then does the project merely, as Wendy Hui Kyong Chun has argued, "personalize crisis" via the theater of social media?[9] We would argue the contrary: *Migration Trail* infiltrates and disrupts the habitual, defamiliarizing both the mediums at hand (e.g., the cell phone, the computer, the map) and the humanitarian crisis being mediated.

For Bazaz, critically reflexive documentary projects evoke a contemplative state in viewers that disrupts the emergency thinking reproduced so often in humanitarian nonfiction media. She argues that critical reflexivity, on the part of creators, and reflexive immersion, on the part of spectators, aim to "activate critical faculties in the viewer" and, we suggest, to rupture the presumably stable identity of the spectator, negating the false sense of proximity to—and empathy with—the Other that (immersive) humanitarian media typically celebrates.[10] Critical, reflexive immersion acknowledges the distance between the viewer and the documentary subject represented and repeatedly draws viewers' attention to their own practices of and desires for looking. *Migration Trail* similarly disrupts our desires to not only look at but *intervene* in the actions of others. Unlike other interactive documentaries, *Migration Trail* does not ask its users to make a series of high-stakes decisions

7   Elaine Scarry, *Thinking in an Emergency* (New York: Norton, 2011), 13.

8   Scarry, 69.

9   Wendy Hui Kyong Chun, "Crisis, Crisis, Crisis, or Sovereignty and Networks," *Theory, Culture & Society* 28, no. 6 (2011): 95, https://doi.org/10.1177/0263276411418490.

10 Aggie Ebrahimi Bazaz, personal conversation with authors, July 10, 2021.

and watch their consequences instantly play out.[11] Yet, by attuning us to the temporalities of migration—to the dizzying shifts between long periods of waiting and disconnection and the sudden changes in our characters' environments that force their immediate action—Killing's project pushes us to become aware of how the decisions we make are embedded within a network of choices that all affect one another. By coupling the interactive map, a tool for spatial and temporal orientation, with an insistently one-sided conversation, Killing pulls the *Migration Trail* user out of the frame at the precise moment when action seems most necessary. Like fully immersive VR experiences that erase the user's view of their own body, *Migration Trail* makes both its users' and characters' bodies into unstable and visually absent entities, provoking a set of anxieties around choice—or its felt foreclosure—that brings users into a renewed understanding of their own agency and responsibility to those around them.

Eszter Zimanyi is a postdoctoral fellow in cinema and media studies at the University of Southern California. She has published in *Feminist Media Studies*, *Visual Anthropology*, and *Media Fields Journal*, among others. Her research interests include migration and refugee studies, global media, and documentary.

Emma Ben Ayoun is a PhD candidate in cinema and media studies at the University of Southern California. Her dissertation, titled "Sick Cinema: Disability, Disease and the Moving Image," works at the interstices of film theory, disability studies, and visual studies.

11 See Christian Rossipal's essay in this dossier for several key examples of this dynamic.

Interview by Eszter Zimanyi and
Emma Ben Ayoun

Against Immersion: An Interview with Aggie Ebrahimi Bazaz

Aggie Ebrahimi Bazaz is an Iranian American practice-based researcher and assistant professor of film production at Georgia State University. Her creative work, which emphasizes community engagement and participatory practice, includes live performance and virtual reality (VR) and multimedia installations. Bazaz explores issues of immigration, diaspora, and liberation, often with a reflexive eye toward the limits and capacities of media itself. Her 2019 film, *How to Tell a True Immigrant Story*, is a 360-degree documentary VR short made in collaboration with the residents of Saratoga County, New York. Bazaz's sensory film plays with the conventions of the documentary interview, staging an encounter between the county's affluent (and mostly white) communities and the immigrant laborers whose presence, though largely unseen, sustains such lifestyles. Bazaz's work thus reflects political potential and limits of immersive media's capacity to incite changes in felt embodiment and subjectivity, which was of particular interest to us as we put together this dossier. The interview below has been edited and condensed for clarity.

Eszter Zimanyi and Emma Ben Ayoun: *Can you tell us more about the process of completing* How to Tell a True Immigrant Story? *In the years since its production, have there been any changes in terms of human flows, technologies, or your own intellectual and creative process that have made you rethink how we tell immigrant stories?*

Aggie Ebrahimi Bazaz: *How to Tell a True Immigrant Story*, which I conceived and developed during a 2016 residency at the Skidmore College's John B. Moore Documentary Studies Collaborative (MDOCS) Storytell-

ers Institute in Saratoga Springs, New York, is a short, experimental act of critical reflexivity in 360-degree VR. It applies strategies from documentary scholarship to our existing discursive frameworks pertaining to people and experiences categorized as "immigrant"—a category that includes myself, my brother, my mother, my aunt, and my grandmother. It is personally meaningful for me to ask, Who and what truths, nuances, and paradoxes might our standard cultural narratives around *immigrant* or *immigration* exclude?

The making of this film began from a discomfort with mainstream documentary's approach to immigrant stories. As an immigrant to the United States myself, I find the term *immigrant* to be a useful organizing principle but also one that inherently others. In order for it to exist, it must presuppose the category of *native*. It must create categories of belonging that may begin as questions of nationality but quickly transform into questions of self and psychology; it creates material and symbolic boundaries. The film argues that when we tell immigrant stories in documentary, we ask questions that are themselves a form of boundary-keeping: *Where are you from? Why are you here? Do you work?* Implied in these are questions like *Are you safe? Do you belong?* These are questions of incorporation and control.[1]

I think what's changed for me in the years since its production isn't so much a change but more a clarification. That is, with the good fortune I've had to think about the film alongside other research-based practitioners, I've developed a language for articulating and critically contextualizing a process and approach to documentary power that was previously a bit more intuitive.

EZ and EB: *To what extent is your work in conversation with discourses about immersion and its connection to empathy?*

AEB: Empathy brings us back to a question of power. We might see an analog for the empathy conversation in a liberal town like Saratoga Springs. Saratoga Springs is a predominantly white and affluent town in upstate New York. It has about 28,000 full-time residents but bursts with activity during the summer launch of the thoroughbred horseracing season. For more than 150 years, the Saratoga Race Course and all its offerings have brought the town countless spectators and a great deal of revenue every summer, as well as thousands of jobs.[2]

As you might imagine, the people whose labor upholds this foundational, vibrant economy are mostly folks of color from Asia, Mexico, and Central and South America, many of whom migrate into the United States via guest worker visas for six to nine months a year to "care for some of the world's most elite racehorses."[3]

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1   See Trinh T. Minh-ha, "Mechanical Eye, Electronic Ear and the Lure of Authenticity," *Wide Angle* 6, no. 2 (1984): 58–62.
2   "Saratoga Generates Record Handle Topping $800 Million," Associated Press, September 7, 2021, https://apnews.com/article/sports-new-york-saratoga-springs -horse-racing-6baca6cf799f48a34a65c60a773a7c1d.
3   Krystle Nowhitney Hernandez, "The Oral Histories of Latino Immigrant Backstretch Workers at Saratoga Race Course" (master's thesis, Skidmore College, 2015), 4.

Almost all who work with the horses live and labor at the barns, across the street from the public racing venue in an area called "the backstretch." Housing at the backstretch is in barrack-style dormitories with communal bathrooms and no functional kitchens. For six months of the year, laborers live in this environment, with up to four people sharing one unit. They work seven days a week, rain or shine, because "animals need care every day, so work proceeds regardless."[4]

So, you have a predominantly white, upper-middle-class town benefiting from and allowed to exist in large part due to the immense, continual labor of mostly folks of color from across Latin America and Asia. This is nothing new, of course. But what's interesting and unique about Saratoga Springs are the ways in which the dominant culture grapples with this relationship.

One of the dynamics shaping relations in Saratoga Springs is benevolence, which also undergirds the humanitarian documentary impulse. There are, for example, plenty of people who volunteer at the racecourse, who give out free food and supplies, who take community members on outings or drive people to appointments. This is all useful; I don't at all mean to suggest it's not. But it does nothing to challenge existing social relations. In fact, it reinforces them through individual acts of kindness.

This is how I see the empathy framework. Documentaries that rely on empathy link their viewers—typically conceived as "educated middle and upper-middle class audiences"—to the subjects on screen through nothing more than "feelings, like caring, concern, sometimes outrage" and "make no structural analysis of the problems described and rarely [propose] solutions," as Jill Godmilow points out.[5] Sonya Childress goes further, noting that empathy's "overemphasis on attitudinal change toward individuals leaves less room for films that push audiences to grapple with the structures and systems that reinforce inequality."[6]

EZ and EB: *You describe* How to Tell a True Immigrant Story *as an "experimental act of critical reflexivity." Can you tell us more about how you conceptualize this term and what it responds to in the longer history of documentary filmmaking?*

AEB: Critical reflexivity is a term that Elizabeth (Liz) Miller has used in publications in which we've brought our two VR films into conversation with each other.[7] With this term, we refer to an approach to documentary methods that is guided not only by content but also by an iterative self-reflection on our processes. Social scientists conceptualize media as serving one of two functions: either media effect social change, or they further the social control of predom-

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4   Hernandez, 28.
5   Jill Godmilow, "What's Wrong with the Liberal Documentary," *Peace Review* 11, no. 1 (1999): 92.
6   Sonya Childress, "Beyond Empathy," *Medium*, March 20, 2017, https://firelightmedia .medium.com/beyond-empathy-ad6b5ad8a1d8/.
7   Aggie Ebrahimi Bazaz and Liz Miller, "Invited and Implicated: Toward Critical Reflexivity in Non-fiction VR," *Digital Radical*, Center on Digital Culture and Society, University of Pennsylvania Annenberg School of Communication, June 18, 2020, https://www.asc.upenn.edu/research/centers/center-on-digital-culture-and -society/the-digital-radical/Invited-and-Implicated.

inant ideologies and social structures.[8] Critical reflexivity is one methodological framework for guiding documentary away from the latter and toward the former. It is the same approach all of the writers in this issue take to studying different media texts and exposing the ideologies underpinning them. These cogent, urgent media analyses you do, these insights into power and ideology, then inform and guide how filmmakers like Liz and I make media.

As other scholars have shown, critical reflexivity attempts to disrupt the ease with which "the indexical power of the [documentary] image" can be deployed to "regard—at a distance—other people's pain."[9] It also works to disrupt the display of traumatic moments for sensationalist value, which reinforce rather than challenge worldviews and norms. In such instances, the documentary image can "monopolistically impose itself on people as a kind of complete reality," thus colonizing the mind; participate in extraction or other forms of community damage; or create that peculiar viewerly comfort of retreating from the screen thinking, "thank God that's not me."[10] Through critical reflexivity, we find a pathway to intervene in documentary's sometimes unconscious immediations, diverting our attention away from reproducing content of "endangered human lives" and toward considering the "aesthetics and politics of representation."[11]

EZ and EB: *To what degree is embodiment—be it your subjects' or your participants'—central to your conceptualization of your creative work? And how does a shift in attention from visual evidence to embodied knowledge complicate the documentary tradition we have inherited?*

AEB: The shift in attention from visual evidence to embodied knowledge is akin, I believe, to a shift from *looking at* to *looking within*. I think it's clear in *How to Tell a True Immigrant Story* that my collaborators and I are not aiming for total mastery of mind, body, and environment.[12] First, because we are working in 360-degree video, the immersion that you experience in more gamified, high-tech, computer-generated environments, like the Red Cross films that Christian Rossipal writes about in this dossier, is completely unavailable to us. Also, many people watch *How to Tell a True Immigrant Story* on YouTube or in Google Cardboard. Even in a headset, though, people become aware of their bodies because of the structuring of the image. View-

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8   J. David Slocum, "Film Violence and the Institutionalization of the Cinema," *Social Research* 67, no. 3 (2000): 649–681.

9   See Alison Griffiths's contribution to this dossier and Susan Sontag, *Regarding the Pain of Others* (New York: Picador, 2003), 13.

10 Haile Gerima, "Decolonizing the Filmic Mind: An Interview with Haile Gerima," interview by John L. Jackson, Jr., *Callaloo* 33, no. 1 (2010): 27; and Jill Godmilow, "Kill the Documentary as We Know It," *Journal of Film and Video* 54, no. 2–3 (2002): 4.

11 *Immediations* references Pooja Rangan's *Immediations: The Humanitarian Impulse in Documentary* (Durham, NC: Duke University Press, 2017); see Eszter Zimanyi and Emma Ben Ayoun, "On Bodily Absence in Humanitarian Multisensory VR," *Intermédialités: Histoire et théorie des arts, des lettres et des techniques* (*Intermediality: History and Theory of the Arts, Literature and Technologies*), no. 34 (Autumn 2019): para. 23.

12 Throughout this interview, Bazaz uses the first-person plural to refer to the makers of *How to Tell a True Immigrant Story* even though she is credited as the sole director; this is a move on her part to emphasize the project's collaborative nature and the significant contributions made to it by other local artists as well as members of the community in which she filmed.

ers may, for example, see a stitch line or be frustrated by what imagery they'd expect and are not seeing. For us, these were all tools at our disposal, all ways of keeping viewers' critical faculties activated.

Through our resistance to hyper-realism and our interventions in the field of view, we wanted to create either a shock of recognition or a shock of defamiliarization, feelings which course through the body, erasing that feeling of bodily absorption and instead calling the viewer back into the piece but also into themselves. In these ways, we're in line with a framework of immersion that Simran Bhalla discusses as a "pedagogical and epistemological method."[13] We wanted the experience to be instructive, to reveal the symbolic boundaries disguised beneath grammars of benevolence.

EZ and EB: *Your projects are all immersive in different ways, and you have previously framed your work as part of a practice of reflexive immersion. Could you tell us more about what this means?*

AEB: When making *How to Tell a True Immigrant Story*, we were not interested in humanitarian immersion. Rather than suppress critical responses, we wanted to *activate* critical faculties in the viewer and *activate* a reflective position rather than give the (false) impression of proximity or "walking in someone else's shoes."

There are, however, scenes in the film that I would describe as *sensory*, scenes in which sensory qualities form a poetics. I'm thinking, for example, of the scene in which a mother and her two children walk through grass while one child asks, "Are we there yet?" I don't define this scene as *immersive* because it's not designed to convey a harsh reality but instead to abstract and defamiliarize reality. It obscures more than it reveals. The design of the scene prioritizes abstraction: texture, motion, and tone are all punctuated by the melodic voice of a young girl repeating her mom's assurance that "*Ya casi llegamos*" ("We're almost there"). The scene never attempts to locate where *there* is but to evoke a sense of placelessness through motion, point of view— the camera is positioned behind the family—and the tensions between the harshness of the grass and the tenderness of the family. This scene, too, is a collage, a stitching together of different types of footage: 360-degree footage mixed with DSLR material and handwritten text. So even though we're located somewhere inside tall grass, we are not immersed. And that's again a play with the viewer's desire for looking-in-on. This scene has some analogs to border crossing—the border being, as we know, a site of horror and spectacle, among other things. We wanted to interrupt the viewer's possible voyeuristic desire to *immerse* themself in border crossing and instead use poetics and abstraction to transport the viewer intellectually elsewhere (to thinking about other acts of looking, for example). We avoid and reject the promise of an unadulterated, hyperreal, wide-angle view and instead disrupt access, aiming in this way to make audiences aware of their "practices of [and desires for] looking."[14]

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13 See Simran Bhalla's contribution to this dossier.
14 Zimanyi and Ben Ayoun, "On Bodily Absence," para. 30.

EZ and EB: *What potentialities for imagining different politics, policies, and futures might nonfiction immersive media allow us (if any)?*

AEB: Nonfiction VR is still so new that the productive possibilities of engaging it toward humanitarian questions are still making themselves known. But I am inspired by Courteney Morin's thoughts on how VR can be used as space for screen sovereignty for Indigenous filmmakers. Morin suggests that VR is uniquely suited to "reflect individual Indigenous philosophies and epistemes" because of its abilities to hold past, present, and future together at once; "deepen storytelling capacity"; and visualize spiritual realms in ways that indexical documentary images can't as easily do. As Morin writes, "the current state of VR allows for the invention of new grammars."[15] And to me, this is an exciting possibility. If cultural narratives "shape our values and behaviors," teaching lessons about "who belongs, what is valued, who and what matters," then cultural narratives are also foundational to necropolitics.[16] If VR allows us new tools and grammars for exploding such narratives, or even exploding our notions of what narrative is, then it can be an additional set of tools in our work to foster transformative social change.

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15 Courteney Morin, "Screen Sovereignty: Indigenous Matriarch 4 Articulating the Future of Indigenous VR," *BC Studies*, no. 201 (Spring 2019): 144.

16 Chi-hui Yang, "Documentary Power: A New Manifesto," International Documentary Association, January 31, 2019, https://www.documentary.org/feature/documentary -power-new-manifesto.