My first encounter with virtual reality (VR) was in Johannesburg in 2015. While in the early days of research on South Africa’s coproduction economy, wherein local filmmakers partner with foreign production companies to access certain tax incentives and international markets, I was told by a prominent South African producer that VR was about to take off in the film scene. Steven Markovitz—a member of the Academy of Motion Picture Arts and Sciences, and known for producing features and short films with artists from across the African continent—had recently seen VR exhibitions at prestigious film festivals like Tribeca and Sundance. He was eager to explore what the medium could mean for film and wanted to see African perspectives involved early on in its development. So when asked to showcase a series of short films for an upcoming interdisciplinary festival on the theme African Futures, he decided to organize a VR exhibition and production workshop instead. In an article promoting the event some months later, Markovitz was quoted about this choice in terms that echoed our conversation: “I thought, here’s a new platform in its infancy and a chance for African filmmakers to get involved at ground level. . . . The VR I’d seen of Africa was generally of wildlife or, in one instance, Ebola, and the work I do is about challenging precisely that sort of dominant narrative. This isn’t about Africa as safari destination or as basket case, nor is it about ‘Africa rising.’ Instead, it’s about everything in between” (quoted in Wilson 2015). To coincide with the exhibition, which would feature VR short films made by early adopters (predominantly based in North America and Europe), Markovitz invited artists working in various mediums and hailing from different African countries to participate in a workshop intended to launch multiple new VR projects on the continent. “The idea [is] to bring this mixed group
together, run a workshop and then commission them to produce new work so that by this time next year there’ll be a selection of fresh material to show” (quoted in Wilson 2015). Taking his enthusiasm seriously, I booked a ticket to the event, hosted by the Goethe Institute of Johannesburg in October 2015. In addition to its VR program—aptly titled “New Dimensions”—the African Futures Interdisciplinary Festival would feature keynote presentations, panel discussions, film screenings, art talks, and performances by prominent academics, artists, and curators from across Africa and the diaspora (Goethe-Institut South Africa 2015). The event also happened to coincide with the first wave of student protests that would become the largest youth-led movement in South Africa since the 1976 Soweto Uprising.

Nearly two years later to the day, the #FeesMustFall movement—an on-going call to decrease or eliminate university fees in South Africa, and to de-colonize education and knowledge production more broadly—remained the backdrop of another conversation I had about VR. “It’s not film—it’s something else,” insisted Riaan Hendricks, an established filmmaker based in Cape Town. We spoke in a sports club in late 2017 at the University of Cape Town, where he had recently enrolled in a program to explore VR academically. A crowd of nearly thirty police officers in riot gear chatted nonchalantly near the entrance of the building, visible through the windows just above our table, their presence intended to deter protestors from interrupting an exam taking place nearby. I had seen the premiere of Hendricks’s latest (non-VR) film, a moving documentary that follows a Rastafarian fisherman for one evening of penetrating conversations about politics, economics, and imperial history. In our meeting, he spoke intuitively from his experience as a filmmaker, now studying what he felt was a very different medium. “How do you tell a story based on experience? Because with VR it’s not film-language that gives you that moment to take the audience on a journey. . . . It’s a kind of madness.”

This chapter draws on just over two years of attention to VR filmmaking with a particular view from Africa at the point when the medium and its implications were only beginning to emerge globally. Starting with my own introduction to VR at the African Futures festival, I proceeded to follow the work of VR producers, filmmakers, and artists who participated in its program, as well as others with an interest in VR that I came to know through film industry events that followed. This inquiry into VR’s significance to film and its industries therefore takes as its entry point a particular conjunction of artists, academics, and film industry stakeholders at a moment in South Africa that might be broadly characterized by an ethos of technological, economic, and political disruption, as well as anticipation. Because my attention to VR was an
unexpected detour taken while conducting fieldwork on more traditional (as in framed, or nonimmersive) film economies in the Western Cape province of South Africa specifically, a comment as to the slippery and awkward scales concerning the invocation of an entire continent in the analysis offered here is necessary. The ethnography from industry events is limited to those which took place in South African cities between 2015 and 2017, and my introductions to many of the emerging VR practitioners and other interlocutors cited below came through a Cape Town–based production company with international funding and aspirations for Pan-African reach. By 2017, this organization had supported VR filmmakers in the Democratic Republic of Congo, Ghana, Kenya, Nigeria, Malawi, Senegal, South Africa, Uganda, and Zimbabwe.

Below I offer insights from early endeavors in VR filmmaking undertaken by several artists and producers working from South Africa, Ghana, Kenya, and Senegal, respectively. The views expressed here come from conversations with VR filmmakers and stakeholders either in person or via Skype; attendance at VR exhibitions, industry talks, and panel discussions held in Cape Town, Johannesburg, and Durban; as well as my own interpretations of the VR films that emerged from the Johannesburg workshop. I also followed online news articles and blog posts either authored by, or about, these creatives and their institutional supports. I cannot, therefore, claim to speak to all VR content production on the continent at large, or even in South Africa alone. The invocation here of “Africa” rather reflects its discursive use by film industry stakeholders—including filmmakers, producers, festival organizers, and funding bodies—based in different countries both within and outside of Africa. These stakeholders professed an interest in promoting VR-narrative media across the continent at large, but with only particular institutional infrastructures and networks in certain cities for doing so. I understand this gloss of parts for an imagined whole as a conscious acknowledgment of the continent’s historic and too-often persistent positioning within a U.S.-European imaginary as the shadow of, or foil to, Western progress and technological advancement, a damaging sentiment that was reiterated, and not for the last time, by the president of the United States just a few months after this fieldwork concluded (Vitali, Hunt, and Thorp 2018).

At the risk of reproducing the grossly generalizing tendency to address Africa as if it were a country (and not fifty-four countries and additional territories) with a single story (see Adichie 2009), I follow and share my interlocutors’ desires to proliferate an image of Africa that stands in singular contradiction to the entire continent’s misrepresentation in media as backward, premodern, and perpetually underdeveloped. The results involve admittedly hasty
moves between scales of ethnographic particularity, postcolonial theory, and reference to the Global South broadly, the pivots from which I have tried to signal clearly below. I had set out to explore the stakes perceived in harnessing VR for Africa, assuming after my introduction to the medium at the African Futures festival that VR’s iconic association with the future would be a driving discourse in its development. I was to find that, in many ways, VR-content production was indeed touted as a sign of Africa’s imminent futurity, or its unique position to leapfrog presumed stages of development using tools of the Fourth Industrial Revolution. The VR filmmakers I followed, however, tended to resist fetishizing VR as some kind of arrival and instead focused on the medium’s potential for modes of storytelling that might challenge the very assumptions underlying temporalities of so-called development, industry imaginaries of the future, and Africa’s positionality within it.

In the sections that follow, I draw on one burgeoning field of anthropological inquiry, described here as African futures, to explore another: the anthropology of film industries (this volume). I endeavor to show how different perspectives concerning VR’s emergence in Africa elucidate contested yet entangled temporal orientations toward visual culture, technology, and decoloniality in one part of the Global South. Following scholars who have worked to unsettle entrenched Euro-modern orientations toward time by mobilizing notions of “untimeliness,” I explore two interrelated tendencies. The first concerns the fact that VR, as a filmic technology and object, gathers varying affective orientations toward time and the future around it. Namely, many industry stakeholders both inside and outside Africa have tended to anticipate VR film as a technological and economic disruption already transforming cinema into its unknowable, but inevitable, future form(s). The second is that many of the VR filmmakers I spoke to emphasized, at one time or another, the opportunities presented by VR to disrupt teleological narratives about Africa that placed it either ahead of or behind persistent Euro-modern measures of progress. What follows is therefore an untimely account of a particular, yet transnational context in which filmmakers and industry stakeholders worked both pragmatically and discursively to make VR into film. And to rethink what film is, and what it could be, in doing so.

A Brief Note on VR’s Past and “Present.” Virtual reality is a visual technology that, in the few years preceding this research, moved from being an outmoded fantasy of late twentieth-century science fiction (SF) to a very real and burgeoning sector of the media industry, inspiring a mix of enthusiasm, skepticism,
and technosocial prophecies. Holding a prominent position in the technological imagination of the 1980s and ’90s—especially in iconic film and television such as *Tron*, *The Matrix*, and *Star Trek*—real-world consumer VR prototypes that drew from developments in military and aerospace engineering stirred both excitement and anxiety for artists and academics alike (Manovich 2001; Pinney 1992; Rheingold 1991). Interest had fizzled by the early 2000s, however, as the hardware consistently failed to live up to its hype. It took until the 2012 debut of a new head-mounted display, designed by an eighteen-year-old Californian in his parents’ garage, for VR to be reintroduced into popular conversation (Rubin 2014). The question of VR now seems to be less a matter of how and when than “as what?” or “which kind?,” and increasingly, “for whom?” (Bielskyte 2017; Kopp 2017; Sinclair 2017).

A brief description of the different modes of VR-related content currently being produced is useful, if only to better signal for the future reader what kinds of equipment and capabilities the practitioners at the time of this writing are working with. New vocabularies have emerged to describe the various forms of VR under development, including augmented reality (AR), which is the digital overlay of figures or infographics onto a view of the real world. In contrast, VR more specifically refers to the total replacement of a user’s visual field with a new

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**Figure 7.1.** African Futures. Photo: © Goethe-Institut/Lerato Maduna.
one. This most often involves a head-mounted display, some of which are tethered to a computer or game console for the strongest processing power. Some VR systems allow room-scale experiences, which require small sensors that track handheld controls, allowing movement within, and interactivity with, the virtual space. The most affordable consumer options are portable head mounts with an attachment for a smartphone to be inserted and act as the display screen. Google released a US$15 version of a smartphone-compatible head mount made of cardboard in 2014 along with an open-source design available online so users could construct their own. These smartphone VR applications only allow stationary or seated experiences, however, where interaction is limited to moving one’s head to view 360 degrees of immersive virtual space.10

As with the platforms available for viewing VR, there are also different formats for making VR content that require different kinds of equipment and production processes, some versions of which are, again, more affordable and accessible than others. While wholly computer-generated VR environments can be made with 3D modeling software and open-source video game engines, 360-degree video rather captures moving images of real-world space on a 360-degree camera, or on a rig of multiple GoPro cameras, that are then stitched together using an algorithm application to form an immersive field of vision. Debates continue over whether 360-video and smartphone-compatible applications can include enough interactivity to count as VR as much as wholly computer-generated imagery.11 For reasons that will become clear, I focus here exclusively on immersive 360-video production (referred to from here on as simply VR film), which was the predominant form of narrative VR content being made by the artists and producers I spoke with over the course of this research.

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A dancer in a white dress alternates between jarring and elegant movements. The stage is the interior of a polygonal sculpture lined with fluorescent lights, which stands in a courtyard surrounded by crumbling concrete walls covered in colorful artwork. Your attention is divided between the artist and the audience.12 Some record the performance with cell phones. Children play in a corner. A spectator leans against a mural-adorned wall so that the wings of a giant butterfly appear as if belonging to him. The dancer steps through the geometric structure and continues through the crowd as the scene fades to black. Text appears in bright graffiti bubble letters: “Spirit Robot.” A subtitle appears in a different typeface, reminiscent of the opening credits to Star Trek: The Next Generation: “Renaissance on the Streets of Accra.” (Author’s viewing notes)
VR Film Title: Spirit Robot (Ghana)
Creator: Jonathan Dotse
“a VR documentary which explores the Chale Wote Street Art Festival” (Encounters Film Festival, 2017)
“Jonathan Dotse is a Ghanaian science-fiction writer and Afrofuturist. As well as creating the first ever African VR experience, [Pandora,] Dotse also runs the AfroCyberPunk blog where he discusses the future of Africa and how new technologies will affect the continent” (de Klee 2016).
Watch it here: https://youtu.be/PGWZMr5cseM

African Futures
The African Futures Interdisciplinary Festival was hosted by the Goethe Institute in October 2015, and held simultaneously in Nairobi, Lagos, and Johannesburg. Each venue featured panel discussions, keynotes, and performances by prominent academics and artists from the continent. The VR film exhibition was supported in part by Markovitz’s production company and curated by fellow South African and consultant for the Tribeca Film Institute’s Interactive department, Ingrid Kopp. The event took place at the Johannesburg venue and was titled “New Dimensions.” Free and open to the public, its curators invited Jo’burgers to “discover this exciting new medium and get to know new

The exhibition space was equipped with swivel stools and computers, with a team of volunteers on hand ready to assist visitors. Festival participants and the public at large casually came and went in between talks to view thirteen short VR films, each chosen to showcase different forms explored by early VR filmmakers. The featured African VR film was Jonathan Dotse and Kabiru Seidu’s Pandora, a reimagining of the Greek myth in “the dreamscape of virtual Accra” (quoted from the program). In the film, the viewer moves from spaces indicative of modern travel—train tracks crossing a highway, a bus station, a bustling harbor, and a curio shop—to a lush forest where Pandora offers up her gourd. The viewer encounters an Accra characterized by connectivity and a suggested caveat: that such gifts come with a price. This intent was confirmed for me when I interviewed Dotse about his next VR film, Spirit Robot. “The central idea behind Pandora was that we were on a threshold of a new paradigm... I wanted to highlight the elements of unpredictability and the kind of power that VR was about to unleash on the world. To try and encourage people to think in the optimistic sense that VR could be amazing, but also to think about all the other implications.”

In Greek mythology, Pandora was created by Zeus as punishment for humanity for stealing Prometheus’s fire—a common metaphor for technology. By removing a stopper from her jar (represented in Dotse and Seidu’s film as a gourd), she unleashed evil into the world. Yet Pandora has also been associated with how humans have shaped the world around them, suggesting ambivalence more than a curse (Chan 2014, 146). Dotse and Seidu’s Pandora expresses optimism in the utopian impulse to shape the world, as well as a subtle warning about the dystopian consequences of industrial production readily visible in Ghana’s landscape, home to one of the world’s most publicized electronic waste dumps. If a VR revolution is on the horizon, massive amounts of outdated hardware and e-waste will follow.

The conversations that took place at the African Futures festival also rarely conveyed an uncritical optimism toward emerging technologies or their promises of dramatically transformed futures. Speakers rather pointed out the continent’s complicated relationship to claims for the future and voiced suspicion around its sudden thematic attention concerning Africa. As curator Bonaventure Soh Bejeng Ndikung asked in one panel, “What is this sudden interest in futurism... what are we trying to skip in not talking about the present, and
not talking about the past?” (quoted in Heidenreich-Selemé and O’Toole 2016, 131). Acclaimed artist and VR filmmaker Jim Chuchu also asked, “Why do so many Afrofuturistic images involve Africans appropriating junk and remixing waste? Is there no room for the new in the future? Does the too-easy, broad-stroke application of the term Afrofuturism eclipse other irreverent or subversive urges that have nothing to do with futurism?” (95). And as curator Adrienne Edwards explained, “The entire apparatus that determines that there is such a thing as blackness is built on the system of modernity. We cannot afford this sweep from past, present, to future. . . . In order for me to proceed on a future position, I claim everything that preceded it” (151). Or, as artist Wangechi Mutu stated simply, “But Africa has always been a place of future” (171).

Skepticism over rhetorical trends about Africa’s position in time, or place in history, are not surprising. In the dominant discourses of colonialism and its neocolonial sequels, the continent has persistently been positioned relative to the Western world as out(side) of time, as lacking or lagging behind modernity; a dark continent still encumbered by superstitions and disorder while the light of reason points the rest of the globe forward. Particularly around the millennial turn, the troubling resilience of this narrative reframed as apocalyptic forecasts, coming pandemics, or perpetual states of crisis (Kaplan 1994) seemed to indicate a mere reorientation from visions of a dark past to a degenerate future. More recently, however, this brand of speculation has provoked counternarratives of Afro-optimism, such as calls for an African Renaissance (Mbeki 1998; Ngũgĩ 2009), or an “Africa Rising,” as the often-quoted 2011 issue of the Economist suggests. Yet, as evidenced in South Africa by the #FeesMust-Fall student movement, in many countries the postindependence promise of socioeconomic transformation extending beyond a rising elite class is yet to be realized. Moreover, widening gaps in wealth, the accumulation of debt, the increasing precariousness and outsourcing of work, aggressive exploitation of new and speculative markets, and even xenophobic sentiments, are in fact global trends. The diverse entanglements of various African countries and subjectivities with these dynamics cannot be reduced to polemic judgments of pessimism or optimism (Makhulu, Buggenhagen, and Jackson 2010).

These rhetorical trends have resulted, however, in a body of scholarship on the subject of Africa’s futurity. Significant among these in anthropology are Jane Guyer’s (2007) attention to prophecy in Nigeria and “the near-future,” Janet Roitman’s (2013) interrogation of “crisis” in Cameroon, Jean Comaroff and John Comaroff’s (2011) provocation that Euro-America is in fact emerging toward Africa, and Achille Mbembe’s (2016b) centering of Africa in modern criticism. These texts draw from earlier critiques of Africa’s prescribed temporality, or lack
thereof, made by theorists like Frantz Fanon (1967), Chinua Achebe (1977), and V. Y. Mudimbe (1988). Academic interests in Africa’s future have been paralleled by a growing canon of African SF, with a scholarly following of its own.\textsuperscript{18} Moreover, celebrated literary works by authors like Kojo Laing, Ben Okri, Wole Soyinka, and Amos Tutuola (often categorized as magical realism) and the myth-histories of Vusamazulu Credo Mutwa are increasingly being counted among what many argue is a rich history of African SF (Chimurenga Chronic 2016; Sunstrum 2013; Thompson 2018).\textsuperscript{19} What these new, and not-so-new, bodies of literature share is a rigorous critique of Western-conceived, so-called universal propositions of personhood, liberal humanism, rationality, and temporality. Rather than seeking recognition as possessing some equivalence to the posited timeliness of Euro-modern subjecthood, African SF authors and artists embrace a postcolonial and ostensibly post- or even “unmodern” outlook. One in which representations of African cosmologies and mythologies are taken up anew, technology and magic are given equal footing, and Western claims to scientific authority are decentered by Indigenous knowledge. These works seek to unsettle persistent hegemonic logics of temporality as a linear model—a consequence of Imperialist Enlightenment thought. They challenge contemporary narratives in which terms like “tradition” still relegate certain practices to the past, and what counts as innovation is reserved only for certain visions of the future (see Mavhunga 2017), denying their coexistence and multivalence in the present. As one speaker reflected at African Futures, “I know more people today becoming sangomas (traditional healers), not as a return to traditions, but as a way forward.”\textsuperscript{20}

It was in this interdisciplinary and international context, and as part of the African Futures program, that an experimental VR film production workshop for African visual artists convened. Experimental because no standardized processes or workflows for making VR films yet existed. Out of this endeavor, its organizers formed Electric South, a Cape Town–based nonprofit organization dedicated to the development, production, and exhibition of the VR projects conceived at the “New Dimensions” workshop. With their support, four of these original workshop participants had completed VR films by 2016.\textsuperscript{21}

In light of these theory-driven beginnings at the African Futures festival, which happened to coincide with the start of the largest student movement in South Africa since 1976, I loosely frame the making of the VR films discussed here after what Kodwo Eshun (2004) has described as an “untimely” meditation and critical filmic practice.\textsuperscript{22} A stance of untimeliness is one that remains purposefully out of step with notions of temporality that were made normative under European imperialism, which discursively positioned Africa as behind the times while phenomenologically colonizing the very temporal rhythms

\textsuperscript{18}  Jessica Dickson
of life under industrial capitalism (Comaroff and Comaroff 1991; Nanni 2012; Thompson 1967). An untimely ethic, explains Wendy Brown, involves an effort to “grasp the times by thinking against the times” (2005, 4). Methods of untimeliness, I argue, are made visible in the experimental, immersive visual practices of these trailblazing VR filmmakers in the postcolony. And because to be untimely is to resist linear modalities of sense making, and so-called rationalized forms associated with Euro-modern aesthetics, the results may very well constitute, as Riaan Hendricks put it, “a kind of madness”—or a disruption of the normative tempos, scales, and dimensions that have come to frame what counts as reality, or realism. Below I describe how the filmic strategies and production processes of virtual reality, utilized by the VR filmmakers discussed here, constitute an unframing of conventional film language—itself with origins in European Renaissance painting. But first I wish to make more explicit how VR’s iconic association with the future, as an object first conceived in the popular technosocial imaginaries of SF, have incited some to enthusiastically reaffirm what are in fact normative conceptions of linear progress while inspiring others—namely, visual artists in Africa—to creatively subvert the very same temporal presuppositions.

By thinking with untimeliness, however, I also wish to avoid delineating simplified counterposing timescales. More complex than temporalities of the so-called “West and the Rest,” VR was being discursively made into film at the time of this research through industry imaginaries of the future, emerging at the intersections of global media markets, international investment and philanthropic support for the arts, and visual culture production in different African countries and cities. Rather than delineating abstract “time zones” according to the presumed positionality of various stakeholders, I look to describe “the flow of social and political worlds as they are actually composed and decomposed . . . dreamt up and desired, in the multiple times they may inhabit” (Goldstone and Obarrio 2016, 18). Attention to forums where VR’s status—as a new filmic medium, an economic disruptor, and a sign of things to come—was being rigorously negotiated afforded a rich ethnographic field from which to do so.24

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You find yourself in a desert. Infographics for oxygen level and temperature appear before you. A computerized voice informs you that your suit is damaged: “Mobility and speech modules are offline. You are unable to move.” Figures on the horizon approach from every direction, wielding weapons. “Identify yourself!” someone commands. A weapon is fired. Everything goes dark. . . . Text appears: “rebooting.” You are inside a large room or warehouse. Five people in military-style dress enter the room and surround you. A woman looks you over. Walking a slow circle around
you, she says they’ve read about your kind; a people obsessed with consuming everything, that abused her ancestors. She tells you they are sending you back, but as a warning . . . Text appears: “If black worlds exist(ed), would you be welcome in them?” (Author’s viewing notes)

**VR Film Title:** Let This Be a Warning (Kenya)
**Creators:** Jim Chuchu and the Nest Collective

“A group of Africans have left the Earth to create a colony on a distant planet. They respond with disquiet to the arrival of an uninvited guest” (Encounters 2017).

*Watch it here: https://youtu.be/AreWCYqoqfE*

**Industry Futures**

For the purposes of this volume, early endeavors in VR filmmaking, and the discourse surrounding its purportedly imminent proliferation from the major media centers of the Global North, offer useful insights into traditional (or frame-oriented) film industries more broadly during a period of supposedly acute disruption. With the rise of premium TV series and “digital-native” platforms like Netflix and Amazon, entertainment journalists from *Vanity Fair* to the *Wall Street Journal* argued “why Hollywood as we know it is already over” (Bilton 2017), and went so far as to declare “the end of the feature film” (Fritz 2017). Headlines proclaiming the death of the movies in 2017 may say more
about hyperbole in news media than the state of film industries themselves, however. At the time, movie theater market statistics were rather showing a modest growth, particularly outside of the U.S. and Canada, and people were consuming more visual content than ever before. Yet there was an overwhelming consensus that the practices of film consumption had dramatically changed over the last decade (MPAA 2016). As cinemas became more immersive, offering panoramic screens with 3D and 4D viewing experiences, and film technologies increasingly merged with gaming, communications, and data industries, VR existed at a nexus where anxieties over technological disruption and anticipation of social and economic transformations came to a head for traditional film industries.

The anticipation and anxiety that surrounded VR should therefore be considered alongside broader questions concerning the future of film. And popular industry news was quick to point out how speculations were driving big changes in film business models, particularly toward greater collaborations with tech industries. For example, IMAX announced in 2016 its new partnership with Google to develop a state-of-the-art VR camera for 2018, a US$50 million fund for financing VR content, and its plans to start building high-end VR arcades. As CEO Rich Gelfond explained, “I just think IMAX has the right brand. . . . There aren’t many companies that have expertise in technology, real estate, and relationships with filmmakers and studios.” From an interview with Gelfond, one Wired Magazine journalist described VR as “poised to be the biggest shift in the history of filmmaking . . . and just as MGM and Warner Bros. made a killing at the dawn of the movie industry, there’s a gold rush happening around the future of frame-free cinema” (Walzer 2017). While VR viewing spaces opened sporadically across the globe, Paramount Pictures took up a different strategy and launched a virtual movie theater viewing platform. Rather than going to a physical theater, Paramount consumers would be able to log in to a website and enter a virtual one through their personal VR headsets at home. Paramount’s senior vice president of new media explained, “Paramount wants to be where the consumers are and the media landscape is changing and we want to be as vanguard as possible. . . . There is quite a cultural difference between high-tech and Hollywood. Here we are testing something that is a page turner in the history of media” (quoted in Busch 2017a).

This industry vision of VR as potentially the biggest cultural bridge yet to link cinema to Silicon Valley also demonstrates Hollywood’s indoctrination into an increasingly hegemonic temporal orientation associated with twenty-first century technoscience. Scholarship on biomedical practice and climate change, for example, has explored how contemporary scientific knowledge,
increasingly presented as speculative forecasts, produces “regimes of anticipation” that structure affective states of anxiety, dread, and hope (Adams, Murphy, and Clarke 2009). Encouraged by neoliberal logics, anticipation has become for many a predominant mode of being in time, one in which the future exists as a palpable influence that orientates subjectivities and lifeworlds in the present (Adams, Murphy, and Clarke 2009, 247–248). Put another way, “one inhabits time out of place as the future” (247). Moreover, as Lana Swartz (2017, 89) describes in her piece “Blockchain Dreams,” in Silicon Valley “technology is always one step behind its promises,” while its presumed socioeconomic consequences are treated as though having already happened.

Notably, source material for imagining film futures often comes from a romanticized view of an industrial past that positions VR film as the inevitable next phase of cinema’s evolution. An example of this was the commonly shared opinion at the time of this research that “we are now in the Lumière phase of VR.” For Samuel Collins (2008, 121), such future-focused yet teleological modes of time reckoning are examples of the continuation of nineteenth-century evolutionary ideology. Logics that point to phenomena in the present as belonging to stages in a linear path already traveled by some other present-object are precisely the temporal models that deny the copresence of observer and observed (Fabian 1983), or, as described above, that relegate certain contemporaneous practices to either the past or the present, foreclosing all but certain futures.

Futures have long been colonized in the name of the present (Giddens 1991; Swartz 2017, 89), but as Vincanne Adams, Michelle Murphy, and Adele Clarke claim, “anticipation now names a particular self-evident ‘futurism’ in which our ‘presents’ are necessarily understood as contingent upon an ever-changing astral future that may or may not be known for certain, but still must be acted upon nonetheless” (2009, 247). And as Eshun (2003, 291) observes, noting the rise of “New Economy” theories and the role of “the scenario” in serving corporate interests, “powerful descriptions of the future have an increasing ability to draw us towards them, to command us to make them flesh.” Futurism in this case, he adds, seeks to “model variation over time by oscillating between anticipation and determinism” (291). Imaginaries of the future therefore do a tremendous amount of work in the present. In addition to justifying radical interventions in its name, operating as if the future, however uncertain, is merely a matter of time also becomes a way of taming disruption—now a popular and perhaps overused term in technocultural and economic parlance—as merely a timely call for capitalization.

Industry attitudes toward VR film therefore present a discursive field where the structures, values, and habits of visual culture production become uniquely visible, as do perceptions of film’s influence on broader social relations and even
philosophical meditations. Even if these strategic moves by major film companies ultimately fail, or if VR is again sidelined as it was in the mid-1990s as a gimmick rather than a game changer, VR still exists for film industries in the present as, following Swartz, an “inventory for desire” (2017, 83). Experimental beginnings also have the potential to open new doors and permit different perspectives, which is especially valuable to those historically excluded from established industry structures and processes. Stakeholders and creatives in the Global South, as African Futures showed, are likely to relate to these desired industry futures differently from those in either Southern or Northern California. In a time and place where calls for decolonization have reemerged in popular discourse and as public protest, the promise of centering Western conventions and inventing new ones makes for a powerfully charged field of possibility. The tricky position in which industry stakeholders in South Africa seemed to find themselves was to promote the potential for African VR film as somehow distinct from its imaginings in the Global North, but without precluding the chance to participate in its markets.

One of the most striking differences between discourses around VR voiced in popular U.S. and U.K. industry news, and the industry talks I attended in South Africa, was about funding. Big companies like IMAX, Paramount, Facebook, and Google have their own capital to invest in developing VR content for distribution, often on their own platforms. Contrastingly, VR film production in Africa tends to rely on foreign investment, often from departments of arts and culture in former colonial metropoles, which fund projects as a form of cultural exchange and a means to maintain diplomatic ties. As Mich Nyawalo (2016, 215) and others have pointed out, reliance on European agencies for funding has created resentment among many African filmmakers who may face patronizing demands from less experienced foreign producers dubbed “mentors” by funders, or even struggle to maintain creative control over their own projects. Additional opportunities exist through international film festivals, many of which have launched new media programs with funds for incubation and development. But in addition to a lack of local funding, international grants amount to relatively few opportunities for artists in Africa. According to Kopp (2017), in her article titled “Who Is VR For?,” these small and not very diverse pots for financing risk dissuading artists and organizations from collaborating. Speaking at a film industry mart in Durban, she emphasized the harsh realities of VR filmmaking as an independent artist: “Most people I know are not getting funded to make VR, and that’s just the reality you should know. . . . Right now VR is a very unstable space to be in, and you need to go into it with eyes wide open.”25 Far from the production resources of IMAX or Paramount, these
VR projects were relatively small yet complicated undertakings, with limited equipment and crew.

Second, access for consumers was also a critical question for both creatives and funders looking into VR film. While companies like Facebook and Sony are updating their hardware to enable greater interactivity at increased computing power, it is developments in mobile phones that many VR film enthusiasts working in Africa see as enabling their future audience. For instance, Yetunde Dada is a first-time VR filmmaker with support from France’s Digital Lab Africa initiative and Atlas V (a VR studio) to produce a project promoting empathy for LGBTQ communities in Kenya. She wanted to be certain that the piece could be viewed in Kenya, despite the likelihood that the current regime would ban the film. In their project pitch, Dada and her production partner, Shariffa Ali, addressed this head on, stating, “Once core communities and sites have been identified, our aim is to send a traveling platform called the VR Mobile Unit, a custom-made VR station equipped with solar panels, as well as creating a cardboard headset dispersal initiative called Share-Board.”

Given the often-cited boom in information and communication technologies across Africa (GMSA 2017), and the availability of the Google Cardboard headset as an open-source design, VR seemed to some almost specially suited for imagined African audiences. However, VR-capable smartphones remain expensive, and data costs are disproportionately high while bandwidth is still relatively low in many areas. Still, as one nonprofit funder optimistically stated, “equipment and access matter when it comes to immersive experiences . . . yet this phone can be the great equalizer” (Barret 2017). In line with twenty-first-century technoculture time reckoning, the general feeling was that the tools and platforms will get better and cheaper eventually anyway (or else fade away entirely).

This brings me to a particularly thought-provoking set of industry events I attended about VR’s filmic future in 2017, including a VR master class that explored recent popular literature on “exponential technology, born of the Fourth Industrial Revolution,” through the lens of Afrofuturism. With an emphasis on critical practice, the presenter proposed that an Afrofuturist perspective, when combined with the emergence of new visual technologies like VR, could offer film students in Africa “new narratives” for envisioning futures beyond a white Eurocentric modernism. Citing seminal Afrofuturist scholars and recent works (such as Anderson and Jones 2016; Dery 1994; Eshun 2003; Phillips 2015), as well as psychiatrist and critical theorist Frantz Fanon (1967) and economist Moeletsi Mbeki (2009), the presenter contextualized “narrative” in this instance as the historical, structural, and psychological positioning of Africa and Africans within a global order organized under European imperialism.
“Historically, progress in Africa has always come at a price. . . . You can see already from the sixteenth century onwards how Africa was set up in terms of the global narrative to be the reserve of cheap labor. . . . I think VR is a way for us to resist those narratives.” “Afrofuturism,” the speaker explained with enthusiasm, “is liberating in the context of VR [because] it enables the construction of radical new languages.” The presenter then met this broader theoretical imperative with a socioeconomic one relating more directly to young filmmakers and students, for whom many educators felt a duty to help “future-proof” for a soon-to-be dramatically changed industrial landscape. “It’s very seldom now that filmmakers, and certainly those coming out of the born-free generation, are only writers, or only directors, or only actors, or only sound designers. Everybody has to have a multiplicity of skill sets. So as much as the technology we use is becoming exponential, we also need to become exponential in our skill sets.”

This was one of two presentations at this particular industry meeting to discuss “exponential technologies”—such as robotics, 3D printing, VR, and artificial intelligence—and to specifically reference the works of best-selling author Peter Diamandis, of Abundance: The Future Is Better Than You Think (Diamandis and Kotler 2012), and Yuval Noah Harari’s (2017) Homo Deus: A Brief History of Tomorrow. These authors presume an evolutionary model of technology with inevitable social consequences, both good and bad. More than one presenter at this film industry event also cited Moore’s law, the eponymous observation made in 1965 by the cofounder of the Intel Corporation, which posits that the processing power of new microchips doubles every two years. This is a favorite framework for Diamandis, who uses Africa as a kind of archetype when making his case for exponential technologies as evolutionary mechanisms. “From the mitochondria-enabled eukaryote to the mobile-phone-enabled Masai [sic] warrior, improved technology enables increasing specialization that leads to more opportunities for cooperation. It’s a self-amplifying mechanism. In the same way that Moore’s law is the result of faster computers being used to design the next generation of faster computers” (Diamandis and Kotler 2012, 79–80). But instead of challenging the Euro-modern narrative of progress that the industry presenter quoted above calls on filmmakers to resist, Diamandis, Harari, and other thought leaders of what the World Economic Forum has extolled as “the Fourth Industrial Revolution” (Schwab 2016) seem to rather double down on existing industrial-capitalist imaginations of technosocial evolution. Moreover, contrary to its common characterization, Moore’s law is not a scientific rule but rather a mid-twentieth-century observation that became a schedule for technology industries to follow (Waldrop 2016). Consumers are
told to expect a new generation of electronics every couple of years, and engineers and factory workers are tasked to deliver.30

Harari, on the other hand, misinterprets the material connection between mineral and knowledge economies when he claims that humanity has finally “broken the Law of the Jungle”—a Rudyard Kipling reference (the British Empire’s narrator par excellence) used to describe a propensity toward warfare. Harari writes:

In 1998 it made sense for Rwanda to seize and loot the rich coltan mines of neighboring Congo, because this ore was in high demand for the manufacture of mobile phones and laptops. . . . In contrast, it would have made no sense for China to invade California and seize Silicon Valley, for even if the Chinese could somehow prevail on the battlefield, there were no silicon mines to loot in Silicon Valley. Instead, the Chinese have earned billions of dollars from cooperating with hi-tech giants such as Apple and Microsoft, buying their software and manufacturing their products. What Rwanda earned from an entire year of looting Congolese coltan, the Chinese earn in a single day of peaceful commerce. (2017, 15–16)

In addition to overlooking the fact that contemporary knowledge economies run on mobile devices, Harari misses the link between “peaceful commerce” and violent extraction in transnational circuits of production (see Parikka 2015). He also describes these two economies as if belonging to different times when he states that “wars became increasingly restricted to those parts of the world—such as the Middle East and Central Africa—where the economies are still old-fashioned material-based economies” (Harari 2017, 15). Never mind that the technological centers of the Global North have been reliant on the violent exploitation of mineral wealth from the Global South since the dawn of the first Industrial Revolution, as the speaker above points out in their comment about “progress” historically coming at a high price for Africa.

The invocation of these best-sellers—and what Eshun (2003), Sherryl Vint (2016), and others have termed the futures industry—at film industry dialogues about VR’s future in Africa helped to elucidate tensions between Afrofuturist (and Africanfuturist) discourses and the temporal orientations of capitalist-driven techno-optimism.31 Namely, that Euro-modern frameworks and imaginaries remain hegemonic in the reproduction of neoliberal logics, transnational economic policies, and the global circuits of materials, minerals, and labor that technology industries both rely on and render invisible.32 Under the weight of industrial capitalism, whether digital or analogue, even Afrofuturist projects can be co-opted by Euro-modern outlooks, especially when powerful affective
states of urgency can be found in both. Such urgencies are also distinguishable, however. While Afrofuturism is not a homogenous movement or monolithic worldview, a common theme in works emanating from North America—where the aesthetic genre first gained curatorial recognition (Dery 1994; Nelson 2002)—is an urgency to imagine any future beyond the dystopian present. At a time when merely proclaiming that Black lives matter becomes a radical rallying cry, to imagine a future at all becomes an act of political resistance (see Brown and Imarisha 2015; Dahya 2018). Imagining African futures from contexts within the African continent can pose different though deeply interrelated imperatives.

For industry stakeholders in the Global South, there is a palpable desire not to be left behind, or, more optimistically, to “catch up.” As one South African film student explained after coproducing one of the first commercially focused VR films in the country, “This is a brand new thing. Overseas it’s been in play for a little while . . . so we wanted to kind of hightail South Africa into the international market. . . . We believe that virtual reality being so interactive and such an awesome experience . . . that’s going to definitely fast-forward our film industry [to] an international level” (Expresso Show 2017, 00:00:47). Importantly, leapfrog or “fast-forward” narratives galvanized by emerging technologies are motivating passionate creatives and funders to take on very real infrastructural limitations in imaginative ways, and often to pursue more sustainable and equitable innovations. They can also hold in place a view of historical and technological progress that still presumes that the West leads the world. As the speaker quoted earlier who promotes VR to film students also rightly pointed out about Harari’s dystopian prediction of a majority “useless” class, however: “you can argue with him and you can critique his point of view,” but in a context like South Africa where unemployment is at nearly 30 percent, “you can’t really dismiss him.”

I will return to some of the imaginative strategies used by the VR filmmakers I followed to create immersive narratives that, each in their own way, challenged a Euro-modern framing of time as linear and inevitable to produce unframed experiences of African virtual worlds. The intention here is not to delineate boundaries between mutually exclusive temporal orientations, or to suggest some radical alterity to be found in modes of time reckoning. Rather I have tried to describe how novel technologies relate to existing frameworks for conceiving time and wield powerful affective influence over ways of being in the world. A critical temporality can also offer a politics for revealing particular frameworks as hegemonic, and for forming counter-narratives to its structuring logic. With the preceding examples, I have tried
to more specifically show how contemporary discourse around technofutures tends to frame conversations concerning film’s global futures. By privileging a view from the Global South, however, Euro-modern perspectives of technological progress now ensconced in visions of an arriving dematerialized industrial future can be critically questioned.

* * *

You are in a forest. A voice reads a lyrical poem about dreams and memories. A person dressed in black, another in red, and a third in yellow dance around you. Holographic forms hover above them. You are transported to a campfire; the steps of a dilapidated building; the bottom of a swimming pool. Butterfly-like creatures flutter around you and the dancers underwater. The dreamy, surreal scene continues until the poem’s end. I feel like I’ve been swaying back and forth in my chair, in concert with the dancers. (Author’s viewing notes)

**vr Film Title:** Nairobi Berries (Kenya)  
**Creator:** Ng’endo Mukii  
“Two women and a man wrangle. Each must hollow out the other’s core for fruits promised but only ever borne in dreams. A poetic symphony on Nairobi” (Encounters 2017).  
Watch it here: [https://youtu.be/dfsJ1CQRyqs](https://youtu.be/dfsJ1CQRyqs)

**Making VR Film**

While filmmakers and industry leaders alike emphasized an imperative to proliferate African stories, it was the form these stories might take that posed the greatest questions for artists endeavoring to make VR film. The accustomed filmic narrative, which moves through a progression of images in front of the viewer, is exploded without the formative restrictions of the frame. With 360 degrees of image, a filmmaker can never guarantee that the viewer will look in one intended direction. Nor can viewers ever see the immersive image in its totality from any perspective, provoking them to turn their bodies to make sense of a plot. Yet each glance offers a new array of possibilities for experiencing the VR story world. The reorientation required for the time-space of 360-degree visual storytelling might then best be described by Hendricks’s reflection on “madness”: “It’s avant-garde, almost surrealism. You, being a person through my [the director’s] eyes, but you’ve got your own agenda. . . . I’m looking in my direction, but maybe you want to look at other things. . . . So I’ve completely thrown out this notion of a film language—it’s more of an experience. I’m trying to create narra-
tive through madness. That’s what I call it for now.” Making VR film therefore meant remaking a filmic sensibility. It also meant unmaking a hegemonic mode of visual representation with roots in a Euro-imperialist worldview.

As visual anthropologist Christopher Pinney argues in his 1992 article on VR and the “future history” of travel, the sixteenth century saw the rise of a Cartesian perspectivalism in Renaissance painting coalesce with technologies of travel to frame the world as an image. “The world as picture,” according to Heidegger, was to be appreciated and apprehended at a distance. Through a worldview predicated on particular subject-object relations, the white European male consumer subject had the privilege to travel across landscapes where he could see curiosities and decipher the similarities and differences between the world and himself.

As travel became a pastime of the elite, the world increasingly came to be conceptualized as “a pictorial surface” (Pinney 1992, 41). The Western subject was purported to stand apart from or above the world as though it were an object, in order to survey it, to grasp its totality, and finally to know it (41–44, 47).

The immersive image, however, undoes this sense of mastery by subjecting the viewer to a visual field that overwhelms any single point of view, or any authoritative way of knowing it (Pinney 1992). This duration of visual space opens up the story world to a multiplicity of potential viewings and experiences. As Collins (2008) avers, following Elizabeth Grosz (2004), in a conception of time (and space) that is open to multiple “virtualities,” time is no longer “a negative force whereby the future is winnowed away through a series of possibles” (Collins 2008, 120), leaving us with only the inevitable. “The future” can rather be understood “less as the dismal consequences of the present than as the excess production of fecund contingencies” (121). The space-time of VR storytelling, unbounded by the frame, opens up a visual field of possibility to tell stories in new ways, where one viewpoint need not foreclose another, and where surprise as much as directorial planning moves a narrative forward. That said, there were key pragmatic challenges that gave shape to what the VR filmmakers I followed eventually produced. In the paragraphs that remain, I describe how directing without a frame, the compounded degree of contingency in 360-degree images, and the technological imperfections of image stitching became akin to what Mary Ann Doane (2007, 38) has called “enabling impediments” from which these early VR film languages were made.

First, the directorial question was viewed as a problem to be solved by some creatives more than others. The inability to guarantee the direction of a viewer’s attention, combined with the potential of cuts between scenes to disorient the viewer, and the need to remove oneself from the VR camera rig so as not to be included in the 360-degree scene, all dramatically compounded the
tension found in traditional filmmaking between control and contingency. As with framed cinema, some VR filmmakers embraced contingency as part of the artistic form. For others, the key to unlocking VR’s filmic potential was to figure out how to control, or at least effectively guide, the viewer’s experience.\(^{37}\)

At the time of this research, Jessica Brillhart—Google’s former principal VR developer and adviser at the “New Dimensions” workshop—had created the closest thing to a manual for directing and editing VR film. Through a series published on her blog, Brillhart (2016) developed a way of mapping what might be called concentric circles of attention. In place of a storyboard, she presents a series of circular diagrams of color-coded rings expanding outward like a cross-section of a tree’s trunk. Dots in each ring represent characters or features in the landscape likely to draw viewers’ attention. By matching these points of interest between shots, the VR filmmaker had a better chance of holding viewers’ attention in a particular direction, and of keeping them oriented in virtual space. Ng’endo Mukii, creator of *Nairobi Berries*, developed her own method, however, by making sure to always include simultaneous action both “north” and “south” of the viewer’s assumed perspective (re:publica 2017, 00:07:45). Less concerned with directing the viewer’s gaze, Mukii’s strategy encouraged exploration of the virtual, surreal world she choreographed. Like the lyricism of her poem, Mukii’s piece is less a narrative to follow than an experience to be moved by.

Another challenge brought up by VR filmmakers and viewers alike was the occasional visibility of “stitch lines,” the result of stitching together images from multiple cameras on a rig to create the coherent 360-degree image in postproduction. The consensus was that stitch lines were merely an imperfection of the medium to contend with in the short term; they would disappear as the tech improved over time. One VR film stood out for its creative mitigation of this problem, however. The viewer of *Let This Be a Warning (LTBW)*—made by Jim Chuchu and the Nairobi-based Nest Collective of artists—is positioned in the story as a character trapped inside a broken space suit. Near the end, a woman walks a slow circle around the viewer while delivering a speech about their fate and twice passes through visible stitch lines. The filmmakers ingeniously made this part of the narrative by adding an AR effect that draws attention to the split image as though it is a malfunction in the visual interface of the viewer’s damaged suit. Turning a filmic imperfection into a diegetic element, the makers of *LTBW* thereby also turned a technological flaw, already treated as a problem of the soon-to-be past, into a visual index for a high-tech future. Moreover, the parenthetical insertion into the closing text, “If black worlds exist(ed) . . . ,” effectively interrupts while also calling out presumptions of a
Eurocentric linear imaginary. The text emphasizes the story’s allegorical warning for the present about the cosmic consequences of white supremacy while simultaneously disrupting the (Western) science fictional notion that such a story—with ray guns, spacesuits, and world of Black sovereignty—could only make sense in a distant future.

Moments when “something untimely disrupts our expectations,” contends Grosz (2004, 5), allow us to be “jarred out of our immersion” in time’s continuity and to assume a stance from which to think critically about time as both an ontological and political element. Jacques Rancière (2010, 139) posits that it is art’s ability to create “dissensus”—“a conflict between a sensory presentation and a way of making sense of it, or between several sensory regimes”—that enable it to affectively disrupt uncritical consensus. For an Africanist perspective, we might turn to artist and theorist Pamela Phatsimo Sunstrum, who specializes in speculative panoramas, film, performance art, and immersive installations, and who also presented at the African Futures festival in Johannesburg. Sunstrum has sought to locate an “African sensibility with regards to futurism” (2013, 113), and is interested in “the de-defining, de-writing, and transcendence of these historical, geographic, national, political, cultural, economic, and temporal specifiers” (114). With this aim, Sunstrum practices an artistic methodology that she describes as “a ‘re-seeing’ of Afro-mythologies through the lens that SF provides” (2013, 113), and cites literary criticism that claims an affinity between SF’s own interest in mythology, time travel, and alternative dimensions, and the “mythical mode” of African oral histories and storytelling that draw on Indigenous beliefs to resist teleological arrangement (Carstens and Roberts 2009, 79–80; Quayson 1997, 149; Sunstrum 2013, 113–114).

While *LGBW* might inspire temporal estrangement through familiar SF-themed signifiers and its closing text, other VR films mentioned here utilize mythology and surrealism to explore how vision “unframed” from Western aesthetic conventions might articulate a new film language. Dada’s VR film, *Round Round*, for instance, follows a gender-nonconforming protagonist as they enact a Gikũyũ myth by walking seven circles around a Mũgumo tree in order to change their sex/gender. Notably, this particular myth also features in an earlier, nonimmersive film by the makers of *LGBW*, which they also imbue with SF aesthetics. Dotse’s *Pandora*, on the other hand, inserts Greek mythology into a contemporary Ghanaian context, while Selly Raby Kane’s *The Other Dakar* is described as “an homage to Senegalese mythology” (Tribeca Film Festival 2017). Sunstrum is careful to avoid cataloguing her notion of Afro-mythology “on geographical, historical, or any sort of imagined ethnic or cultural categorization,” and rather advocates a “thoroughly subjective descriptor of
Africa-originating modes of narrative practice and orality” (2013, 115). Mythic subject matter is thereby drawn from eclectically, similarly to the ways authors like Wole Soyinka, Ben Okri, and Amos Tutuola draw on Indigenous resources for signs and symbols to elaborate on a “mythopoesis rather than a straight forward realism” (Quayson 1997, 18, 67–68). For “realism,” argues literary scholar Ato Quayson, “promotes a view of reality which is inadequate to engaging with the problematic fusion of the real with the other-worldly” (1997, 149).

To this end, many of the filmmakers I followed employed a surrealistic aesthetic, for which, as Hendricks points out, VR film seems particularly suited. Stitch lines, for instance, seem to lend themselves to worlds that intentionally disrupt realism, as do elements of the unexpected or the seemingly undirected. For example, Kane’s The Other Dakar follows a young girl given privileged access to an invisible world. Kane, an SF-inspired fashion designer by trade, fills The Other Dakar with neon lights, eccentrically dressed spirits, and regal artists, and the viewer’s perspective oscillates from just above the ground to several feet in the air. Undoing or playing with camera-height conventions was something Mukii also described in the making of Nairobi Berries, which shares a surreal or dreamlike sensibility.40

These gestures, which disrupted viewers’ ability to orientate themselves conventionally in cinematic time-space, became VR-filmic tools for “other-worlding” in an Afro-mythic mode that could challenge Euro-modern worldviews historically associated with framed Cartesian perspectivalism and realism. Sunstrum reminds us, however, that the Afro-mythic mode she advocates in contemporary artistic practice is not related to “an essentialist or nostalgic distant past” (2013, 116). This is not, in other words, a case for supplanting Western artistic perspectives with precolonial ones, which might reinforce Western claims to the present while relegating African perspectives to the past. Nor is it to strictly delineate between European, African, or Afro aesthetic and temporal sensibilities. Rather, to return to a visual politics of untimeliness, the suggestion here is that an African futurism, variously being made visible in VR-filmic practice on the continent, is more about refusing a temporal order of things than about making claims on a future that still sees itself as emerging from only particular centers of technological and cultural production. As Mbembe also explains, commenting on Africa’s futurity, “that Africa is gradually perceived as the place where our planetary future is at stake—or is being played out—is due to the fact that, all around the world and especially in Africa itself, older senses of time and space based on linear notions of development and progress are being replaced by newer senses of time and of futures founded on open narrative models. . . . [W]ithin the continent itself, Africa’s future is more
and more thought of as full of un-actualized possibilities, of would-be-worlds, of potentiality” (2016a, 96).

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“The Other Dakar is a manifesto in a sense, it is for me a way to reconnect the urban space with its mythology and to use design and creativity as a platform for the invisible Dakar to express her uniqueness. In a time where materialism occupies the mainstream, there is a need to re-invest imaginary spaces and use them as a fertile soil for the necessary adjustments we need to implement as a country facing several cultural and political changes.” (Filmmaker’s note, Kane 2017)

VR Film Title: The Other Dakar (Senegal)
Creator: Selly Raby Kane
“A little girl is chosen to discover the invisible Dakar” (Encounters 2017). “An homage to Senegalese mythology... this magical 360-degree film transports viewers to a place where past and future meet and where artists are the beating heart of the city” (Tribeca Film Festival 2017).
Watch it here: https://youtu.be/2OhCMhYMazA

Figure 7.4. The Other Dakar. Photo: Electric South/Selly Raby Kane.
This chapter has sought to explore how contested yet entangled modes of temporality have informed—and have been made visible through—creative practices and discursive endeavors to make VR film in Africa. By relating critical discourses around themes of African futurity to industry conversations about the future of film in light of VR technology, I show how a sense of urgency to disrupt Eurocentric narratives can become co-opted by industry narratives of urgency; how new technologies and their economies become seen as the movers of time, their disruptions something to be actively anticipated, prepared for, and capitalized on. The temporal orientations of creativity, its industries, and the varying worldviews of those involved are not mutually exclusive, but pragmatically entangled and made flexible to accommodate the necessities of economic livelihoods in what, for many, are increasingly precarious lifeworlds.41 For these reasons, untimely interventions that need not cohere in some distinct other-timely claim, but can rather dwell in the disorientation of the seemingly surreal, may be preferable to notions of technological disruption now so easily converted into business as new, but made usual.42 The VR films discussed here, I have argued, each in their own way resulted from practices in critical and experimental worlding that resisted teleological or Euro-modern narratives.

But to return briefly to Riaan Hendricks’s claim at our meeting in 2017: can we still call this film? In the spirit of resisting foreclosures, the case for VR as film (in addition to many other things) remains an open question. The creators discussed here did, however, use technological and structural processes closely associated with filmmaking in their bids to create visual stories told through moving images. And unlike the filmmakers of Sherry Ortner’s (2013) ethno- graphic study of the U.S. Indie-film scene “at the twilight of the American Dream,” who deployed a harsh realism in ideological opposition to the “unreality” of early twenty-first-century Hollywood, these VR storytellers from Ghana, Kenya, Senegal, and South Africa made their virtual worlds untimely experiences by diversely deploying other aesthetic tactics borrowed from framed cinema. Science fiction–themed estrangement, avant-gardism, and surrealism were used to effectively resist a realist worldview associated with white Euro-modernism, a worldview in which, even according to Heidegger, “the accepted principles of metaphysical truth work to set ‘experience on a definite path’ without allowing themselves—or their very frame as worldview—to be called into question” (Robiadek 2016, 388).43 Moreover, instead of being specially enabled by a new technology, making VR into film may have more importantly presented opportunities to explore different narrative modes, and to
draw from marginalized forms of storytelling, made possible by a willingness to experiment despite the risk-averse character of most film industries.

This openness by industry stakeholders is not a given, however. And although VR is an emerging medium for which conventions have yet to be established, it is also an iconic pop-culture object—what VR will (or ought to) be able to do has, for many, seemingly already been worked out in decades of popular, predominantly Euro-American, science fiction. To approach the question of VR as film another way then, one could also ask: is film not always a virtual reality? Ingrid Kopp often emphasized at film industry events, in her usual cautiously optimistic tone, that while it is unclear whether 360-degree video VR—or game-engine VR, or AR, or something in between—is actually poised to be the next big thing, it is definitely becoming something. “So it’s really important that Africans are involved in this prototyping phase.” She once added, while closing her talk with a famous press image of Facebook founder Mark Zuckerberg presiding over an auditorium filled with what appears to be exclusively white men in VR headsets, “if Silicon Valley and Hollywood get to decide what VR is, then we are in a lot of trouble, because this episode of Black Mirror sucks.”

Notes
In addition to the editors and reviewers of this volume, I am indebted to my colleagues, friends, and mentors who offered invaluable feedback at various stages of this chapter’s creation, including Jean Comaroff, Warrick Moses, and Ahmed Ragab, as well as the members of my 2020 virtual writing clinic—Gbemisola Abiola, Zabeen Khamisa, Ping-hsiu Alice Lin, and Anna Neumann—who provided much more than just scholarly support throughout a difficult year. And also to Luke Hollis for kindly reviewing my use of still-emerging VR terminologies.

1 Markovitz’s recent producer credits include the award-winning aKasha (Kuka 2018) and Rafiki (Kahiu 2018).
2 Riaan Hendricks, personal communication with author, November 1, 2017.
3 I am especially grateful to Ingrid Kopp and Steven Markovitz for their time and generosity, and for connecting me with VR filmmakers working in various African cities.
4 The problem of a persistent triangle of concentration concerning gear, information, and access to limited funding in South Africa, Nigeria, and Kenya was often brought up at VR-related industry meetings, as was the need to better include filmmakers in Francophone countries in these networks.
5 The political boundaries of which are the result of regional, imperial, and colonial histories, and are cross-cut by speakers of an estimated two thousand different languages that also extend beyond the continent (Mugane 2015; Ndhlovu 2018).

The rights for which were later acquired by Facebook for a highly publicized US$2 billion.

Examples of AR in popular culture at the time of this writing are Niantic’s mobile game Pokemon Go and Google’s wearable AR glasses, Google Glass.

Both AR and VR, as well as less-common designations like mixed reality (MR) and extended reality (XR), are still contested terminologies that have as much to do with marketing strategies as distinctions of design and technological capacity. “Virtual reality” is often used colloquially as shorthand to refer to the umbrella category of immersive media.

The format preferred would seem to depend on the industry looking to incorporate the new visual technology—such industries include everything from film to video games, porn, communication, advertising, medicine, architecture, archaeology, planetology, mining, and real estate—as well as the perceived desires of its consumers and the resources of producers.

When reviewing my notes about my own impressions of these VR films, which I jotted down immediately after viewing them, I noticed that I tended to describe their plot structure in the second person. Questions over how VR film might utilize first-, second-, or third-person narration inform screenwriting scholarship (see Larsen 2018), as well as demonstrate how limitations of the technology in fact provoke a broad range of possibilities.


Agbogbloshie, a dumping site in Accra, has garnered particular global attention in recent years as various news outlets published images of young men extracting hazardous materials from the site, highlighting the transnational circulation of e-waste from the Global North to the Global South and its impact on global health inequality (Hirsch 2013; Ottaviani 2015; Schiller 2015). See Onuoha (2016), however, for an important rethinking of this region’s representation.

Quotes from the edited volume produced postfestival (Heidenreich-Seleme and O’Toole 2016).

See, for instance, Gilroy (1994) and Hanchard (1999).


For example, Adejumobi (2016), Bould (2013, 2015), Carstens and Roberts (2009), Hugo (2017), and Nyawalo (2016).

See also Eshun, however, on B. Kojo Laing’s 1992 novel Major Gentle and the Achimota Wars, in which Eshun argues, “Instead of integrating the Laingian text into the canon of African science fiction or belatedly admitting it into the canon of Afrofuturism, perhaps a more generative procedure would be to think with the ways in which a Laingian grammar reorganizes the predicates that compose the ‘futures’ and ‘futurities’ of science fiction. In doing so, it might indicate ways of reconfiguring the ground, the stakes and the object of the ‘future’” (2019, 86).

African Futures, panel discussion, October 30, 2015.

A second workshop has since been held, and VR films are being developed with support from Electric South by artists in Nigeria, Malawi, the Democratic Republic of Congo, Zimbabwe, South Africa, and Uganda (Electric South 2017).
Eshun’s use of “untimely” is particularly apposite here. Following the enthusiastic reception of *Handsworth Songs* (Akomfrah 1986) by the Black Audio Film Collective (BAFC) at the Documenta11 contemporary art exhibition in 2002, Eshun employs his own “untimely meditation” (a reference to Nietzsche) as a critical intervention to the supposed linear progression of the arts industry, and provides a review of the BAFC’s body of work stretching back to the early 1980s. Moreover, Eshun describes their artistic practice, which involved reediting, redubbing, and recontextualizing archival and broadcast video footage as “a radical interruption of the smooth teleology of twentieth century European film culture” (2004, 40). Eshun concludes his review by stating, “in refashioning the documentary into an untimely meditation, the Black Audio Film Collective created a politics of the image that simultaneously functioned as a new image of politics” (45). The launch of the #FeesMustFall movement also sparked intergenerational reflections at the African Futures festival, leading one presenter to comment that “students have discovered their parents’ struggle.” This chapter looks to capture a sense that these were times that pushed against the very notion of “the times,” and that, like the Black British visual artists of interest to Eshun’s 2004 review, the VR filmmakers I followed from 2015 to 2017 also sought to deploy a critical filmic practice of untimeliness, while nonetheless working within an industry-oriented field preoccupied with timely capitalization for Africa.

As mentioned previously, and also highlighted in the introduction to Brian Goldstone and Juan Obarrio’s (2016, 16–17) edited volume *African Futures*, several anthropologists have taken up “the untimely” as a critical perspective and intellectual strategy in recent years. See, for instance, Pandian (2012), Rabinow (2008), and Wilder (2009).

Ortner has referred to this kind of “cultural ethnography through discourse” (2013, 31)—that draws on formal industry forums like film festivals, screenings with Q&As, panel discussions, published interviews with entertainment journalists, and so on—in which members of a creative or industrial community explicitly “interface with the public” as “interface ethnography” (26).

Ingrid Kopp, Durban, South Africa, July 17, 2017.

Yetunde Dada, personal communication with author, November 1, 2017.

All quotes from industry master class held in South Africa in 2017. The presenter did not wish to be identified.

South Africa’s “born free” generation refers to those people born after South Africa’s first democratic election in 1994.

Harari’s work in particular had garnered a popular readership in South Africa by this time. On my return flight from Durban to Cape Town, I purchased a copy of *Homo Deus*—a stack of which was prominently displayed at the airport bookshop. Before my flight departed, I was approached by two different people who saw me reading it and wanted to speak with me about it.

The sustainability of Moore’s law beyond the present decade has increasingly been called into question (Khan, Hounshell, and Fuchs 2018; Simonite 2016).

Eshun defines “the futures industry” as “the intersecting industries of technoscience, fictional media, technological projection, and market prediction” (2003, 290). And the critical essays of Vint’s edited volume for *Paradoxa* on the same subject concern “the need to reclaim the power to imagine the future outside of industry-produced
advertising images” as well as “our imaginative capacity to think about estranged and new worlds rather than to capitulate to the future as envisioned by global capital” (2016, 8, 9).

32 For more on the invisible labor of the internet and computing service industries, see Lemov (2015) on “clickwork” and the data-driven body, and Gray and Suri (2019) on “ghost work.”

33 Debates regarding aesthetic and thematic distinctions between works of Black SF produced within Africa and those produced in the diaspora continue to inform Afrofuturist and Africanfuturist scholarship. South African author Mohale Mashigo explains her own desire to avoid the label of Afrofuturism in terms that echo the skepticism of an emphasis on the future voiced by many of the participants at the African Futures festival quoted earlier. In an essay titled “Afrofuturism Is Not For Africans Living in Africa,” which serves as the preface of her 2018 collection of short stories, Mashigo states, “May this ______ (insert the name you’ve all agreed on) also focus on Now and not just The Future. Let us use our folktales if need be—use them to imagine us being fantastical in the Africa we occupy right now.” Mich Nyawalo, however—in his comparison of “the aesthetics of hope” in Jean-Pierre Bekolo’s vision of a future Cameroon in the film Les Saignantes (2005) and Wanuri Kahiu’s portrait of a postapocalyptic Kenya in her film Pumzi (2009)—considers Afrofuturism a poetics deployed by both films to “destabilize eurocentric depictions of the continent” (2016, 219). For Nyawalo, Afrofuturism is an aesthetic and narrative tool that is contextual and relevant to Africans living in Africa because, as he explains, “afro-futurists do not simply place black bodies into previously whitewashed futuristic and technology-enhanced spaces, they also deconstruct the very idea of progress, including the evolutionary continuum associated with such locations. In this way, it is not just ‘western’ notions of modernity and progress that are redefined, essentialized ideas about African tradition are also taken to task” (212). More recently, Nnedi Okorafor (2019) has put forward a definition of Africanfuturism as similar and sometimes overlapping with Afrofuturism. “The difference,” she explains “is that Africanfuturism is specifically and more directly rooted in African culture, history, mythology and point-of-view as it then branches into the Black Diaspora, and it does not privilege or center the West.” The nuances of these debates are not adequately summarized here, but as Grace Gipson points out, many conversations between key Afrofuturism scholars, authors, artists, and activists have taken place on social media, bridging geographical distances and national borders. For Gipson, who advocates for an inclusive and additive view of Afrofuturism’s meaning and creative utility, any tweet using #Afrofuturism meaningfully should be understood as adding to Afrofuturist scholarship (2019, 85).

34 See also Muñoz (2009).

35 Riaan Hendricks, personal communication with author, November 1, 2017.


37 See Doane (2002) for more on cinematic time and contingency.

38 This description borrows language used in the production pitch for the film, provided by the filmmaker.
See *Stories of Our Lives* (Chuchu 2014) as well as Henriette Gunkel’s analysis of this film and its use of cinematic time in her chapter “Alienation and Queer Discontent” in *We Travel the Space Ways* (Gunkel and Lynch 2019).

Ng’endo Mukii, personal communication with author, July 14, 2017.

See Curtin and Sanson (2016) and Standing (2011).

For more on productive disorientation, see Ahmed (2006).

For more on Heidegger’s distinction between “worlding” and “worldview,” see Robiadek (2016).

Ingrid Kopp, industry talk, July 17, 2017. *Black Mirror* is an SF anthology television series, often referred to as *The Twilight Zone* for the digital age.