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Sandbox of Memory

A thesis paper submitted in partial satisfaction of

the requirements for the degree of

MASTER OF FINE ARTS

In

DIGITAL ARTS AND NEW MEDIA

By

Parul Wadhwa

June 2018

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Abstract

“Sandbox of Memory”

Parul Wadhwa

This thesis explores the development of a virtual reality documentary piece Sandbox of Memory. Sandbox of Memory is a story of personal memory. The accidental discovery of a forgotten briefcase leads Navdha Malhotra to discover the lost history of her grandfather, a refugee from the partition of India. She uncovers a treasure trove of identity. His refugee documents, degree certificates, passport and personal journal entries reveal to her the man he was in India under British colonial rule. This thesis paper describes my experiences developing Sandbox of Memory and outlines some of the lessons learned, setbacks, and successes. The project constitutes my first attempt at an immersive documentary.

The set of core research questions relates to the significance of alternative and forgotten histories, oral storytelling, and experience in the emerging medium of virtual reality.

Keywords: documentary, post-colonial theory, virtual reality, oral histories, memory, trauma, forced migration, erased history, marginalized narratives, testimony, truth, cultural identity.
Dedication

To the family and friends whose support made all this possible.

Dedicated to the memory of my grandparents who were partition refugees.
Acknowledgment

This project was a collaborative effort and team members will be credited appropriately.

My project advisors, Professor Sharon Daniel, Professor B. Ruby Rich and Professor Susana Ruiz always offered me unconditional support, inspiration, and expertise from varied areas of study. To the User-experience designer who worked with me in most stages of this project: Thank you, Samvid Jhaveri, without you Sandbox of Memory couldn’t have been visualized. Thanks to John Webber for his curatorial vision for the exhibition “Interstices” where this project made its debut. And finally, thank you to my entire DANM 2018 cohort- it’s been super fun and rad.

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Introduction

"In the age of the digital, post colonialism is about reclaiming the third space, imbibing the new technology and telling true stories."

Artist Statement

In my thesis paper, I invoke a leading figure in cultural and post-colonial discourse, Homi K. Bhabha, and his idea of “the third space”1 and notions of hybridity. I will comment as to what these concepts mean for an immersive documentary project like Sandbox of Memory that attempts to re-design the principles of immersive storytelling and is an experiment to create an alternative space to tell a true story about identity and displacement. I will begin by examining these concepts in detail and revisit them throughout the thesis paper to argue their validity in the age of the digital.

The aim of the third space, according to Bhabha, is to consider cultural identity in a global society. The third space refers to the interstices between colliding cultures, a liminal space “which gives rise to something different, something new and unrecognizable, a new area of negotiation of meaning and representation.” In this new in-between space, cultural identities are constantly formed, reformed, reclaimed. As an Indian woman artist in the diaspora working within the realm of

1 Homi K. Bhabha and Professor of English and African-American Literature Homi K. Bhabha, The Location of Culture (Routledge, 2012).
the digital, this in-between space derives from the condition of being in a place where I am but which is not my home.

I hope to position my research and thesis within this paradigm as an experimental work in progress and to be in conversation with these ideas in the context of post-colonial discourse. Within post-colonial discourse, the concept of the third space contributes to an approach that avoids binaries and stereotypes and develops inclusivity in the patterns of cultural exchange, especially in the age of technology. *Sandbox of Memory* offers the audience-participants an immersive experience learning about the history of Navdha Malhotra’s grandfather, Tilak Raj Malhotra, as reflected in the refugee documents he left behind. The participants put on a virtual reality headset and interact with a virtual briefcase containing thirteen documents that they can closely examine. As they do so, they are embarking on an experiential journey through Tilak Raj Malhotra’s past, as each of the documents is contextualized by audio narratives spoken by his granddaughter Navdha, who just discovered them for the first time.
The Third Space: An experiment in de-colonial immersive storytelling

I am a woman artist from the Indian subcontinent working to imbibe the nature and aesthetics of technology and create work within its possibilities and confines. My journey into discovering the narrative explored in my project Sandbox of Memory began in the summer of 2017 while living in California, and thinking of India, my home. The United States, my new abode, was still grappling with a reality of a new political leadership and I witnessed massive political protests over the imposed travel ban on several Islamic nations, denying them entry to the United States. There was immense panic amongst my friends who were in the US from everywhere else and I felt a sense of déjà vu. Why? I found myself pondering the brutal history of my own subcontinent where people were separated from their loved ones, in the name of religion. That summer I could not return home, but a desire germinated within me to tell stories of these people who have witnessed loss and longing, forced migration and trauma.

The Partition of India (from here on, referred to as Partition) is the division of colonial India into two separate states of India and Pakistan on August 14, 1947. At the time, few people understood what Partition would entail or what its repercussions would be. Migration of people on an enormous scale based on religion followed, triggering riots and mass casualties. Muslims left for Pakistan and Hindus for India. Almost sixteen million people may have been eventually displaced, travelling on foot, in bullock carts and by trains. Estimates of death toll
post-Partition are almost two million. Many were killed in communal riots as well as by contagious diseases in the refugee camps. The creation of Hindu-Muslim antagonism was the most significant accomplishment of British imperial policy: the colonial project of “Divide and Rule”\(^2\) which reached its tragic culmination in 1947 with the Partition of India.

The year 2017 also marked the seventieth\(^{\text{a}}\) anniversary of the Partition of India, an event that displaced over a million people by arbitrary borders in the name of religion. South Asians lament this seventy-year-old “itch”\(^3\) but mostly these laments are of two kinds: those that revisit the horrendous toll that Partition entailed, and those that mourn India’s descent into a communal mindset. The British role cannot be overlooked, although it is questionable whether a slower path to independence and Partition would have substantially reduced the bloodshed. On the other hand, heeding the demand for Indian independence a decade or so earlier may have led to very different consequences and communal harmony. British officer and lawyer, Cyril Radcliffe — “Having never set eyes on the land he was to partition,” as the poet W.H. Auden\(^4\) put it — was invited to sketch the borders. Seventy years later, the ascendancy of Hindutva\(^5\) (an ideology seeking to establish the hegemony of

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Hindus), is once again a bitter reminder of religious fanaticism, and is reflected in lynching and increasing curbs on free speech in India.

*Sandbox of Memory* is an experiment to reclaim freedom of expression and decolonize one of the several such narratives that exist. As an artist, I am attempting to create an alternative, virtual space where these thoughts and ideologies can unfold for the audience within the context of Partition.
The Problematics of the Partition History: Oral History Narratives

The history of the making of Modern India is contested. Official public records reveal the history of the “great men” like Mahatma Gandhi, Jawaharlal Nehru and Mohammed Ali Jinnah, detailing their epic accounts during the freedom struggle, and yet leaves a huge void which spurred the need within the canon of Partition studies to shift the focus to people’s histories and thus popularize the oral history archives of Partition. Oral history is instrumental in understanding the trauma and turmoil ordinary denizens experienced during the turmoil and chaos of the collapsing days of the “Raj” in India.

The 1947 Partition Archive at the University of California Berkeley is one such oral history archive that records oral narratives of Partition survivors. The narrative of Sandbox of Memory portrays fragments of an unresolved past. Navdha and I are the same generation; we are both descendants of partition refugees and we both had a very similar past and an urge to comprehend our realities in the present. I felt the need to reach out and contact her through this archive. Although neither one of us

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7 Per the Dictionary of the British Empire and Commonwealth, the term 'Raj' is a Hindu word for sovereignty refers to the period of British rule in India from 1858-1947.

8 http://www.1947partitionarchive.org
is old enough to have experienced the partition, much of our burgeoning friendship
was dedicated to lamenting the divide, wondering, by no means for the first time,
what on earth Partition was all about. Navdha’s story of discovering her
grandfather’s history through a forgotten briefcase with refugee documents was like
a microcosm of the erased collective history of Partition. When one considers the
fact that Partition is a history of forced migration and genocide in the name of
religion and politics, it seemed incomprehensible to us both that not enough
research, representation or media exists about it even after seventy years. At this
point, we felt the need for more interventions, research and art to speak up about
the Partition and its lost narratives. Sandbox of Memory is an experimental virtual
space revealing Navdha and her grandfather’s story and attempting to open such
new spaces, in the context of Bhabha’s “third space” to explore these important
historical accounts of the event.

Oral histories from the Partition are testimonies from ordinary people and argue for
a space, a rhetorical “third space” in which to re-write history from the point of
view of people who experienced the bloodshed and whose lives and generations
were affected by the chaos and turmoil. It is also cathartic for my generation to
listen to each other’s stories and make sense of our traumatized past which has
inevitably affected our participation as citizens of a neo-liberal, post-colonial Indian
State trying hard to do away with their historical heritage, history and trauma in the
frenzied social fabric of Hindutva.
I suppose what has irked me most about historical accounts about the partition is the “nostalgia” for the Raj and an Orientalist fantasía\(^9\) with an underlying white gaze on the exotic, uncivilized colonial subjects. Oral history narratives, on the other hand, are attempting to chip that veneer and offer alternative accounts. It shouldn’t come as a surprise that up until now, India hasn’t had a single memorial or museum of Partition\(^10\). My thesis work was made in collaboration with the Museum of Material Memory in India to fill this gap and at the same time it is an homage to the tradition of oral storytelling in the subcontinent and its collective history as the Indic civilization.

The result of my research on the existing oral histories from Berkeley’s Partition Archive led me to Navdha’s grandfather’s refugee documents and artifacts from the Museum of Material Memory in India which gave me permission to replicate them into 3D models. After that, Navdha and I set out to create and record our new version of oral history narratives of her grandfather’s reflections on migration and life across the border.

The project entailed questioning the authority of public history and led us to find a way to offer an alternative, “third space” through personal memory. We asked,

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\(^9\) Bilal Qureshi "Original Brexit" *FILM QUART*, Vol. 71 No. 1, Fall 2017; (pp. 59-64)

what’s the truth beneath the surface and whose truth and narrative does public history reveal?
Chapter 2

Objects as Emotional Evocations

“Stories are for joining the past to the future.
Stories are for eternity, when memory is erased,
when there is nothing to remember except the story.”

Tim O’Brien’s The Things They Carried

Military veteran and writer Tim O’Brien’s seminal collection of short stories, “The Things They Carried” effortlessly blurs the boundaries of fiction and non-fiction. Semi-autobiographical, each story is anecdotal of the objects soldiers carried with them and the people and times they associate with the memories of those objects. In Navdha Malhotra’s recorded account in Sandbox of Memory, she notes, “People form associations with memory and for me, these documents are the memory of my grandfather.”

The intent of Sandbox of Memory is to voice one of the many erased histories from the narrative of partition. I very much hope that this work provides fertile ground from both a technological and a historical point of view where women have often found themselves being dismissed and thus becoming invisible. Sandbox of Memory is a VR project about a woman's reflections on her family history that uses

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the 3D model of the briefcase as an “evocative” device to build a relationship with audience members to interact with the thirteen objects within the briefcase. Author and social scientist, Sherry Turkle\textsuperscript{12} in her collection of writings, mostly autobiographical, “Things We Think With”, asked people about the emotional and intellectual associations they make with everyday objects. Her essays reveal objects as emotional and intellectual companions that anchor memory, sustain relationships, and provoke new ideas. Turkle says, “We think with the objects we love; we love the objects we think with.” In Sandbox of Memory, Navdha’s association with her grandfather’s objects is reminiscent of a past she has yet to grapple with, an identity that was hidden away from her.

Seventy years after Partition, at the opening of the first Partition Museum in Amritsar, India, in the year 2017, the need for oral history and “listening” was addressed:

Until recently, we have known little about what the experience of Partition meant for those who lived through it, how they put their lives back together again, how they coped with the loss, the trauma, the grief. This silence is about what I call the ‘underside’ of the history of Partition, that is, its human dimensions, its many hidden histories, is not a silence of simple historiographical neglect.\textsuperscript{13}

\textsuperscript{12} Sherry Turkle, Evocative Objects: Things We Think With (MIT Press, 2011).

Interestingly, oral history projects about Partition are often started by the grandchildren of survivors and not their immediate successors. Guneet Bhalla, the founder of the 1947 Partition Archive at University of California Berkeley theorizes that this is because there is more emotional distance between the generations, which helps to break down barriers. Born and raised to identify as Indian or Pakistani, however, the younger generations are also less prejudiced against one another than those who recall an India undivided.14 Most South Asians have read about the partition of India and about the turn of events that shaped where we are today but the fascinating or rather sad thing is that despite the best efforts to capture as much of the past as we want, many personal stories have remained untold, the pain suppressed and the trauma still existent. Sandbox of Memory is an attempt to bridge that gap. It is an endeavor for healing and reconciliation through an inter-generational story about memory, loss, identity and trauma.

If the Partition Archive deals with oral testimonies, Sandbox of Memory provides an opportunity to the next generation’s diaspora to engage with and thus recover some of those memories. The former is based on first generation accounts and the latter explores the transgenerational impact of trauma. Together, both the oral history narratives and the VR documentary project in a way represent the present Indian state in which generations are trying to deal with the memories of the Indian

Partition of 1947 and its aftermath. Cathy Caruth in her book “Trauma: Explorations in Memory” argues, “that the history of a trauma, in its inherent belatedness, can only take place through the listening of another”\(^\text{15}\)

*Sandbox of Memories* attempts to create a space where transgenerational stories of trauma may be shared. The medium of virtual reality serves to offer an immediate and immersive experience whereby participants can literally touch and "feel" personal, story-rich and evocative artifacts.

\(^{15}\) Cathy Caruth, *Trauma: Explorations in Memory* (JHU Press, 1995).
Chapter 3

Erased Histories: Memory and Trauma

One of these most important challenges that the project is trying to address is the second generation’s ability to deal with the past without having direct memories of their own yet continuing to feel its impact. I, along with Navdha find ourselves in a similar predicament. The memory is triggered in everyday situations: a conversation with a grandparent, the news on the television, the continuing Indo-Pakistan disputes and communal disharmony. Even without experiencing it first-hand, the later generation tries to make sense of a forgotten narrative that precedes their birth. Recalling and recounting memories and passing them along through storytelling can play a significant role in addressing intergenerational trauma. I am hoping to address through Sandbox of Memory by using Navdha’s audio-narratives and attempting to design experiential storytelling in virtual reality. That’s important because stories are often not told because they are painful, and trauma is passed along through affects, behaviors, or objects, instead. There’s a kind of silence and tension to this way of inheriting trauma. The younger generation feels the need for stories that the older generation wishes away.

Much work has been done to portray and address inter-generational trauma within the context of Holocaust and its aftermath. Hirsch and Spitzer in their seminal

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essay “The Witness in the Archive” explain what studies on the holocaust have brought to the study of memory and conversely, how the witness testimonies of Holocaust have been inflected by Memory Studies which has led to a foregrounding of embodiment, affect and silence. In the context of the Partition too, the stories of the great men and the freedom struggle has overshadowed the personal narratives, silenced them into oblivion and eventually erased them. It’s only now, after seventy years, that the trauma is traced back to those memories that were only related to a chosen few over years. Sandbox of Memory brings one of those personal narratives to the foreground as a personal memoir and seeks healing and reconciliation.

By offering my audience members an opportunity to navigate through the briefcase and explore Navdha’s grandfather, Tilak Raj Malhotra’s history, I am hoping to create a space within which the existence of such a past is justified. I’m anticipating that a virtual space devoid of an environmental specificity would add to the immersion of experience yet allow for the user to avoid memories which might trigger a similar intergenerational one in the audience member and disturb them, or force them to acknowledge a pain that was never addressed.

I am hoping to create a “third space”, reclaiming and reconstructing an identity for the audiences in the virtual world, free from the adages of national or racial identity and thus attempting to open fissures of their own trauma and past.

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17 Homi K. Bhabha, Nation and Narration (Routledge, 2013).
Chapter 4

The Postcolonial in Technology

Noted postcolonial scholar at University of California Irvine, Kavita Philip comments on the exchange and politics of working with computing technology. She says,

Computing technology has disproportionately been associated with the resources of the developing world including India, China, South Korea and Taiwan. Representations of the economic threat posed to the West by Asian countries has commonly been gendered, as, for example, in the recent issue of Wired magazine, whose cover represented the outsourcing threat as an exotic Asian woman on whose hand was inscribed Henna patterns formed by lines of computer code.¹⁸

_Sandbox of Memory_ hopes to find its place within the post-colonial discourse from a technological point of view, re-appropriating this supposed “threat” posed by Asian women. The choice of the medium is crucial for any artist and as a new-media artist, I found myself in a gray area. I am a woman artist, speaking from within the South Asian diaspora working with computing technology designed by resources in the West and assembled by Asian countries. Also, collaborating with a user-experience designer from Asia who was helping me code my story for a VR

headset made in Taiwan opened a lot of interesting crevices of labor movement and migration, something the *Sandbox of Memory* attempts to address.

*Sandbox of Memory* is situated within this new and interstitial industrial space and developing world labor economy by its way of reproducing VR storytelling in a different way than known to the prototypical Silicon Valley audiences. I hope to weave in these ideologies in my decision to work with virtual reality as a tool to make a project about a woman grappling with her history and past.

Seventy years ago, at the end of the article, “The Work of Art in the Age of Mechanical Reproduction”, cultural critic Walter Benjamin warns us to be careful with the new media such as photography and moving images that can be appropriated for war: “Viewer beware! Stay vigilant and do not become absent-minded from the effects on the body due to these new technologies.”¹⁹ I wonder what would he think of VR controllers that use designed interactions and head-tracking movements for active audience/participant? Benjamin’s prophesy about new technologies was a wise reminder for me to not design the user experience according to the typical and narrow ways it is used in VR game design. *Sandbox of Memory* attempts to provide an experiential sojourn and personal agency and fits into the genre of virtual reality narrative storytelling although the bulky and

expensive headset offering agency seems to be a hindrance albeit more so because of the technological constraints rather than design.

The narrative of *Sandbox of Memory* is deeply situated within the post-colonial discourse of race and cultural identity: at the same time, mine, Navdha’s, and her grandfather Tilak Raj Malhotra’s. Here, my interest is to explore cultural identity in relation to colonial technology. Cultural theorist Stuart Hall, in his essay “Reconstruction Work: Images of Postwar Black Settlement,” interrogates questions of historical memory and visuality in relation to photography as a colonial technology. He says, “The past cannot speak except through its archives. When such histories do come to be written, the photographic evidence is likely to play an extremely important role.” However, photographic images are often perceived as more epistemologically realist than other representations. This superficial acceptance of photographic images as historical evidence without critically examining who the producers of these images are can be dangerous, Hall cautions. *Sandbox of Memory* intends to avoid this potential pitfall by using 3D objects and audio narratives in a way that disrupts the viewer’s assumptions of decontextualized realism.

My intent with *Sandbox of Memory* is to interrogate questions about identity, history, memory and loss with a new technology, virtual reality. My

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purpose to do so is to decolonize techniques of representation and storytelling and be the producer of the fragment of my own past. Here I attempt to comprehensively analyze the traumatic nature of ‘the colonial experience’ by use of a neo-colonial technology like VR. It is this position that enables an investigation of the power relations and questions normalization of representation. I argue that it is this deconstruction of the migrant identity through the lens of technology that will provide a refuge to the post-colonial identities and stories of displacement for the people in the diasporas, like me, who are all but part of this global machinery and constantly “reclaiming” the silence, both as mourning and reflection.
Chapter 5

Borderlands: Migration as a human right

In topical politics and current world affairs, migration is a term associated with involuntary mobility, nomadism, trauma, loss and asylum, and the image of the migrant is that of someone perpetually feeding off illegitimate and scarce resources of the country offering refuge. Art, film and other cultural productions in these uncertain times have depicted migration as a distraught mishap and less of a human right, a choice and a search for a home. In his book, “The Migrant Image,” TJ Demos examines the ways contemporary artists have reinvented documentary practices in their representations of mobile lives: refugees, migrants, the stateless, and the politically dispossessed. He presents a sophisticated analysis of how artists from the United States, Europe, North Africa, and the Middle East depict the often-ignored effects of globalization and the ways their works connect viewers to the lived experiences of political and economic crisis. Throughout his book, Demos shows the ways these artists creatively propose new possibilities for a politics of equality, social justice, and historical consciousness from within the aesthetic domain.21 His study reflects the various ways and artistic interventions by which artists have mobilized the image of the migrant in their works. He questions how it’s possible to artistically represent life severed from political representation, for

example, by documenting the stateless who are denied the rights of citizenship and the legal protections of national identity.

I argue that in this context, it is important to understand how artists identify themselves in relation to the migrant subject, as voyeurs and scholars and then, what is the intent and purpose of the artistic reproduction. For me, *Sandbox of Memory* is an intervention, a crack in the door to open a dialogue, spark a conversation and attempt to seek healing and reconciliation. At the same time, the artistic expression reflects the time and space this work was created in. As a woman artist working with technology it was a means and not the end to initiate conversations and create space for work that is niche and “subaltern” 22. I also encourage an informed approach to the current migration crisis in the wake of historical events and at the same time recognize coerced migration as endemic and offer sanity, sympathy and an alternative representation of people seeking asylum.

*Sandbox of Memory* attempts to do that in two ways. Firstly, by displacing the audience-member in a dark space and secondly by giving them the agency to play with the objects in their environment. In virtual reality, the audience members put on a headset that separates them instantly from their current reality and takes them to a virtual void where they have the agency to explore memories through a plastic controller. Through such an artistic decision, I argue and reflect on the politics of

the borderlands and the vulnerability of the citizens without a “national identity”. I’m hoping that this fragility gets experienced by the audience member as a participant in the piece, in a space they take time grappling with.

The experiential act of touching the objects and hearing the audio narratives from the protagonist opens a window of shared experiences of migration considering intensified levels of technology, movement, and marginalization. Thus, my project reflects a transformation of once rigid national identities into transnational identities defined by culture and common experiences. These, if not all, are some of the goals of *Sandbox of Memory*, yet at the same time it also aims to avoid the trap of a homogenous national identity in the increasingly cosmopolitan world less segregated by movement of labor, culture, language and technology.

*Sandbox of Memory* hopes to allude to these ideas by bringing the past into the present and offering a reflective, meditative black void in a virtual space to ask what it means to be a migrant today in the technological global space of a creative economy. What is illegal presence anyway within such porous borderlands and the age of the digital? These are some of the questions my thesis intends to bring forth.
Chapter 6

Virtual Reality, Cinema, and Intergenerational Storytelling

Before I embark on joining these disparate threads, I would like to go back to late 80s-early 90s’s when Brenda Laurel, renowned HCI scholar and games theorist, defined Virtual Reality. She says, “Virtual Reality is everywhere again today, and that’s a problem. Almost immediately after the new trend began, people started shopping 360° immersive video as VR. It is not. “Surround” movies are marketed as VR. They are not. “VR Storytelling” is a misnomer; it is not structurally VR. “Second Life” is described as VR. It is not. When the term is appropriated, its meaning disintegrates. Last time around, the same effect spread out across media types that are not VR. There is no such thing as “desktop VR.” Application of the term “VR” to a CAVE experience is questionable. When we use the term just because it’s sexy, its meaning spreads like an oil slick over our media”.

So, then what defines virtual reality, and does it have a valid existence as an art form? These are some of the questions Sandbox of Memory aims to investigate while experimenting with an emergent medium. Sandbox of Memory surrounds the audience members in an immersive environment where they encounter an antique table with a worn-out briefcase on it. They are encouraged to “interact” with the environment and the objects in it. By doing so, it makes them more of an active

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“participant” than an observer/audience or viewer in an environment and goes on to construct a new reality each time they interact, and they all interact differently, curating their own set of documents on and around the table. Laurel writes, “Of the many uses to which VR may be put, explicit narrative storytelling is one of the least effective. By engaging in an immersive virtual world with various affordances and themes, a participant creates a story, or many stories, by traversals of the world. The author(s) of the world must design cues and affordances that encourage the participant to make interesting choices.”¹²⁴ This is called the principle of action in the VR vocabulary. A participant must be able to act in the world and perceive the effects. This is part of the larger sense of personal agency.

But does it validate its existence in the art world? As virtual reality breaks into the art world at all different levels, a host of questions about curation are still being explored. The Berlin-based artist Olafur Eliasson said that we were only in “the Stone Age” or prehistoric period for the medium.²⁵ I agree. The haptics are continuously changing and there is an utter sense of operating in a vacuum when it comes to impact and outcome with virtual reality projects. On one hand, technologists like Chris Milk make claims for it to be the “ultimate empathy

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¹²⁴ Ibid

machine” but on the other hand, there are deep concerns about the effects of virtual reality on human behavior of such works. Speculations prevail that in the coming times, virtual-reality works may plan more along the lines of the film industry. For film scholar Homay King, the terms “digital” and “virtual” are ubiquitous. As concepts, the senses of being (actual/digital) and becoming (virtual/analog) allow King to examine the two through the lens of cinema: “The virtual is not the same as the false. They come from two different orders. The true and the false relate what is actual and not actual; the virtual has nothing to do with these.”

In her book, “Virtual Memory,” she makes a statement about cinema as a form of virtual reality, using French philosopher Henri Bergson’s ideas. She says, For Bergson, the virtual includes both this mirroring of the present in the form of the past and projections into the future, which form another jet in the stream. He calls the second stream a pantomime: sketches of possible courses of action in response to perceptions of matter in the world. It is what Bergson called la durée, duration. The virtual emerges through an encounter with durational time. It goes


27 Schmid, “Virtual Reality Asserts Itself as an Art Form in Its Own Right.”

into hiding when time is experienced as abstract, enumerable, and computable, as it could be rendered as a long roll, yearbook, or timeline of calendrical units superimposed on the universe. The virtual surfaces when time is perceived as a continuous stream of images that forks, loops, and doubles back on itself, beyond any computational or instrumental framework that we might be tempted to impress up on it.  

I argue that cinema and other time-based media are precursors to VR as they all succeed in transcending time and space by being experiential. My thesis work explores this temporality and duration by analyzing the amount of time the audience member spends in the piece and the piece itself is not timed in the user-designed experience. The interactivity can emerge as an encounter with durational time like flipping through documents in an old briefcase in one’s garage and crossing boundaries of context, race, and personal narrative into a form of intergenerational storytelling reminiscent of family histories beyond time, borders and nationality.

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Chapter 7

Ethics at the Boundaries of the Virtual: A New Reality

Charles M. Ess in *The Oxford Book of Virtuality*\(^{30}\) shows how the strong dualisms underlying prevailing understandings of the relationship between “virtual” and “real” in the 1990s have been largely replaced in this century by views emphasizing the inextricable inter-relationships between these two experiential domains. Charles Ess then makes a link between relational models of the self-found in Aristotle, Confucius and the emerging notions of the networked individual as a “smeared-out self” constituted by a shifting web of embodied and informational relations.

The boundary between computer-enabled virtuality and our experiences of the material world surrounding us continues to blur as technologies continue to develop. At the same time, however, some of the most recent work in philosophy of mind reiterates the stubborn resistance of embodied knowledge and “identity” to erasure in virtual environments, a resistance increasingly apparent over the last decade.

This dialectic is in keeping with the larger history of ethics in the face of diverse forms of development, including technological development, and it is increasingly important for makers to consider especially working with marginalized communities. I would argue that while making avatars and reconstructions of the

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real to the virtual, makers should be conscientious of the repercussions, though what’s “true” even in documentary is debatable. While creating, the 3D rendering and modifications of the protagonist’s grandfather’s documents in Sandbox of Memory, I confronted this dilemma acutely.

Kamal Sinclair, the director of the Sundance Institute’s New Frontiers Lab, goes a step further to define that as the “new reality”. She says that makers must begin listening to create this new reality: “What might it look like to adjust the design of our media and tech spaces so they center the needs of those historically marginalized in those spaces?”31 This is a crucial first step towards equity, perhaps: deep, active listening to those most impacted by the conditions that many of us are critically resisting. Listening is an important part of fighting for marginalized people to gain access to resources and opportunities that have been systematically denied by the institutions of philanthropy, professional media, and technology industries. Interviewees for the Making a New Reality research32 identified the lack of boundaries that come with the advent of new technology as especially problematic when you consider America’s history of inequity, and systemic oppression or exclusion.


Within this paradigm, I would argue for a space for myself as an emerging artist jostling for her voice and access to technology to voice marginalized narratives. We need to understand who the “producers” are of these stories, these narratives and within what “boundaries” these accounts were accessed and permissibly redistributed. This is vital to an understanding about the ethics surrounding the ways new creative technologies are activated to tell the stories of others.

Women in VR\textsuperscript{33} have a long history of being erased. This has long been the mantra: there are not enough women in technology fields, and it seems to be especially true in today’s resurgence of Virtual Reality. Some people are saying it’s no surprise, as VR has always been a man’s game. While it is true that some of the earliest founders of VR, circa 1965, were, in fact, “fathers,” the lesser-known history includes an extensive number of women who made significant contributions to the field.

I would here talk specifically about a few women VR artists in this context who made significant contributions to the field and whose work I’ll be later discussing at greater length (refer to the Appendices) in the discourse in which *Sandbox of Memory* finds itself rooted.

*Tamiko Thiel* used the VR medium to create impactful political statements. Her 1995 work, *Beyond Manzanar* placed participants within the Central California internment camps used to detain Americans of Japanese ancestry during the Second

World War. Skillfully weaving newspaper clippings and photos from the habitation days of the camps into 3D reconstructions of the abandoned buildings, and adding haunting audio, Thiel (herself half Japanese) allowed visitors to feel the longing of these unfairly incarcerated people far from their homes. Zara Houshmand, Thiel’s artistic partner (of Iranian descent) also contributed aspects that underscored the fear of injustice other cultures might feel in America. Another woman in VR whose work has been making ripples since the 80’s is Monicka Fleischmann, who has been creating aesthetic experience spaces, many of them VR-based, winning numerous awards and patents for her team’s innovative immersive techniques. Many also draw inspirations from Ulrike Gabriel’s work Her Memory Arena (1999) which connected three people in a rich visual and auditory VR space full of memory phantoms that reacted to user behavior.
Conclusion

I think *Sandbox of Memory* falls in a niche space. Though its intended audience and participants are non-experienced VR users within the South Asian diasporas around the world, the project aims to address the postcolonial strife within the context of a third space within the digital. It also hopes to strike a chord with survivors of war-torn zones and generations affected by trauma and strife across borders.

Working on *Sandbox of Memory* taught me countless lessons about VR as a medium for documentary storytelling. The development process showed me ways that VR documentaries can express complex emotions and concepts through a combination of experimentation and academic inquiry. Seeing the final product in action, finally in the hands of not so experienced public for VR, I believe that I have crafted a compelling experience with this immersive experience. Participants could navigate the environment easily, and most of them could explore the entire user interface designed and looped in a short period. My immediate goal was for participants to form connections with the protagonist, the stories, and the characters, and I wanted people to experience surprise, delight and anxiety within the VR experience (refer to Appendices). I am less certain if the immersive experience sparked any complex conversations about memory and trauma in relation to Partition of India but I think it opened a fertile ground for debate about colonial hegemony and cultural identity. Making an immersive storytelling experience that is at once accessible, entertaining and politically engaging was my goal. I want to use VR as a tool to challenge
assumptions about not only the medium, but about what it can offer in terms of storytelling and interactive experiences. My ultimate disappointment lies in frustration, anxiety and confusion with the medium and the haptics, and for the most part I seem to have avoided that. *Sandbox of Memory* is an experiment that explores complex ideas of migration and sustained trauma through storytelling techniques that are immersive in nature and hopefully it will continue to be successful in its reception by the public.
Illustrations

Fig1 : DANM MFA Exhibition “Interstices”, Digital Arts Research Center, UC Santa Cruz
Fig2: Briefcase accessed with a HTC VIVE Controller in virtual reality
Fig 3: VR Environment: Desk, Briefcase and documents
Fig 4: Audience participant experiencing the piece at Digital Arts Research Center, UC Santa Cruz
Fig 5: Audience participant experiencing the piece at Digital Arts Research Center, UC Santa Cruz
Appendices

Technical Information

_Sandbox of Memory_ is intended for an art gallery setting or a VR film festival and is a fifteen-minute VR experience for audience players to become participants and experience the core loop of memory through thirteen objects found in a briefcase. The experience takes viewers on an experiential journey of exploring a refugee’s documents. The VR experience begins with archival footage of a newsreel which provides a brief backdrop of the history of partition and the consequences, opening the stage to exploring the story of one such displaced person. It is optional to enter the piece this way. The piece begins when the audience participant is asked to engage with a button on the screen which reads - Begin Experience. The audience member then choses to click on the button with the controller. All the instructions to operate are on the controller and the audience members are wearing a HTC VIVE headset. After the scene that the viewers are about to enter has been contextualized, the audience participant finds themselves in a dark room with an antique table in front of them. On top of the table, is a gray briefcase and they are encouraged to interact with it with the controller in their hand. The thirteen objects available in the briefcase are a passport, a photograph, reference letters, journal entries, educational certificates, a “political sufferer” certificate, receipts and bills, a wedding card, a US visiting card, an affidavit, a commemoration plaque, a copy of the poem Desiderata, and their family tree (see figures 2 – 3). The goal of the experience is
to explore a forgotten memory, a life left behind, and provide audiences a loop that invites considerations of recollection, memory, and passing of oral storytelling traditions through generations using framework designed by me and my collaborator, the UX designer Samvid Jhaveri.
Mechanics:

Using a HTC VIVE controller, audiences point and click on the screen featuring a 3D world and animated 3D objects placed in the briefcase. The tools used were C#, Unity and SketchUp.

We used a different level manager each time to move between different unity scenes easily. That also helped separating the core work of designing from the rest of the piece and the aesthetic choices of the piece. In terms of the interactions, the physics of the 3D objects is unique as it dives into a territory where we keep in mind the people who are experiencing VR for the first time. The physics of the 3D objects is designed to respond to collision detection by the physics of the table and come back to the specific place on the table if someone accidently drops it. This process was designed to aid the new, inexperienced VR user who is unaware of any gaming spatial dynamics to be comfortable with the experience.

Another thing that we implemented is force curation of the object interaction. We arranged the objects in such a way that people choosing the objects have “agency” to choose whatever they want, as in a real-world experience, but at the same time they have the freedom of using the objects in any order after using them once. We have curated this list with both left and right stack of objects separately.
The audio of the object is also a unique thing to align with the objects. We learned from our preliminary user testing that we should save the progress of the user if they drop the object midway while listening to it so we have the functionality to save the objects by pausing the audio and starting from the point it was left at. Lastly, having this as a sitting experience saved us a lot of tweaks that needed to be done in terms of tackling motion sickness in VR.

To reduce the complexity of the piece we have collectively decided to create this as one-handed experience using just one HTC VIVE controller. Although in the current build, one can do the same work with both the controllers, we have also focused upon giving only one controller to the user for the experience, to reduce the complexity and to make the learning curve easier for first-time VR users. Interaction with the objects which are paper thin was quite hard to manage as the collider which works with the size in millimeters kept colliding with the designed 3D objects so we ended up turning the collisions on and off constantly to stop getting weird physics calculations and inferences. That led to very buggy user-testing experiences that we could fix with the help of changing object sizes and calculating collision detections again and again.

The audience participant then uses a curated set of documents to attempt to go to and experience each object by picking it up with the trigger of the controller. Moving the documents to different locations changes the camera's perspective to do head-tracking, as well as change the audio. The audio is the narration of the
granddaughter and her emotions when she found these documents for the very first time. The entire experience is curated to time itself out in fifteen minutes, but if audiences finish earlier, the experience automatically concludes. Narratively, this means that the audience member who finds all objects and hears all stories will transition from this experience to the end. Clicking and holding the documents will play Navdha’s audio narration with ambient classical Indian music sourced from a free internet archive, Archive.org. The audio is an endless, repeated loop until the object is put away.
**Dynamics:**

The limited options for audiences (single controller pick up and drop objects), clear apparent goals (explore the 3D objects and hear the different stories) along with alternating camera views with head movements encourage participants to explore the space in the hope that they will trigger something new each time. In many ways, this acts as a kind of point-and-click adventure where participants try to pick everything in the hopes that they will be rewarded with audio response. This remains true of participants who repeat the loop too, hoping to find something they did not hear before in the first stage. As nothing in VR world is procedurally generated, participants seasoned by many minutes of exploration and play often become most interested in trying to reach distant objects and places in the environment while the experiential loop is endless but content, however, is not extensive.
Aesthetics:

The primary aesthetics in *Sandbox of Memory* are exploration, discovery, and memory. The main action in the experience is exploration through the controller that guides the audience into an unknown world that they become familiar with over a period. Discovery occurs when the participant does indeed pick something up, namely, the documents, and hears a story. Participants thereafter are free to discover the objects and the space through exploration. The experience allows the work to connect and resonate with the participants’ internal memories while they are empathizing with the refugee’s journey.

Over the course of its roughly one-year development, *Sandbox of Memory* has undergone several dramatic changes in nearly every facet. Using the free Unity engine, I began work on this VR experience by myself and intended to finish it alone. Previously, I had worked on documenting migrant experiences but working in a virtual environment with similar tools was extremely challenging.

I have always felt a need to diversify the documents and objects that I sourced from the Museum of Material Memory, India which led to a lot of adventure as I couldn’t get the real things and so that led to a great opportunity to explore empathy through 3D modeling, simulation and exploration. I’m tired of experiencing VR documentaries in which the experience offers only three degrees of freedom with head tracking experiences and no agency to “participate.” I desired a 3D ecosystem
in which participants could experience the life of the refugee grandfather through those documents and to do so, they need to have the freedom to touch (via a controller). Ultimately, this vision was fulfilled with the help of my collaborator, a skilled UX designer in the Computational Media department. While we did not quite achieve six degrees of freedom since we programmed only one controller and the lighthouse, I learned a lot about the concepts I was pursuing and what it means to make a VR experience in the documentary format across several disciplines. It helped improve my programming skills in Unity. I constantly sought guidance from an experienced team of advisors and colleagues, game designers and storytellers. One person certainly cannot make a VR experience alone and the time I spent working in collaboration with so many different people helped me conceptualize a unique vision. I learned that immersive experiences are collaborative by nature, more akin to filmmaking or producing a play than solo experiences like painting, writing, drawing or any other traditional art forms.

*Sandbox of Memory* is the first experiential VR documentary I have ever created as a producer-director. In making this project I experimented with many conceptual ideas from other disciplines and documentary studies that I wanted to test out, all while serving two major unified aesthetic goals: to explore the perspective of others and contemplate trauma in the context of postcolonial studies using the artistic, expressive medium of VR.
Examples of Prior Art

In the discourse of artwork produced within the context of borderlands and migration, few artists have pushed boundaries using technology as a tool.

Ricardo Dominguez, an artist and professor at the University of California San Diego (UCSD), made headlines with his art project the *Transborder Immigrant Tool*. A project of Bang Labs, an artist collective based out of and funded by UCSD, the *Transborder Immigrant Tool* is an art project manifested as a piece of software. The software program is intended to be loaded onto widely available and inexpensive cell phones that then can assist border-crossing attempts as well as fundamentally alter the experience of crossing the US-Mexico border. The reprogrammed cellphones are designed to point the user to nearby sources of water, show them maps of the border territory and generate route maps through it, and even deliver inspirational poetry.34

By giving migrants the access to GPS satellite systems that guide their movement across the harsh terrain of the desert, as well as giving them access to soothing poetry and even generating new routes through precarious terrains, the *Transborder Immigrant Tool* fundamentally changes their experience of crossing. While it may not be obvious is that the *Transborder Immigrant Tool* is an art object as it is understood for its relationship and entanglement with the migrants using it, and

their subsequent entanglement with the border-line. The phone never does anything on its own, but rather requires the “participation” of subjects who become active in their entanglement with it. The figure of the cyborg-migrant\textsuperscript{35}, walking through the desert linked to positioning satellites and path-finding algorithms, destabilizes the juridical and repressive modes within which they would be rendered a criminal. It is no surprise that Ricardo Dominguez describes the Transborder Immigrant Tool as a “disruptive technology” as it moves to disrupt the typical traumatic experience of border crossing.

Another artist whose work influenced the conception of my thesis work is Mexican filmmaker Alejandro G Iñárritu. Iñárritu’s conceptual virtual reality installation Carne y Arena (virtually present, physically invisible) which explores the human condition of immigrants and refugees. Based on true and realistic accounts, the superficial lines between subject and audience are blurred and bound together, allowing individuals to walk in a vast space and live a fragment of the refugees’ personal journeys and memoirs. A six-minute-long immersive installation, this virtual reality sequence employs state-of-the-art immersive technology to create a collective narrative.

“During the past four years in which this project has been growing in my mind, I had the privilege of meeting and interviewing many Mexican and Central American

\textsuperscript{35} “You Are Cyborg,” WIRED, https://www.wired.com/1997/02/ffharaway/
refugees. Their life stories haunted me, so I invited some of them to collaborate with me in the project,” Iñárritu says. “My intention was to experiment with VR technology to explore the human condition to break the dictatorship of the frame, within which things are just observed, and claim the space to allow the visitor to go through a direct experience walking in the immigrants’ feet, under their skin, and into their hearts.”

_Beyond Manzanar_ is another powerful work by artist Tamiko Thiel. It is an interactive 3D virtual reality environment, a metaphorical landscape that explores political scapegoating of ethnic populations in times of crisis. The historic experiences of Japanese Americans in World War II and the more contemporary experiences of Iranian Americans during the 1979 Iranian Hostage Crisis form the basis for a surreal and poetic work contrasting immigrant attempts to achieve the American Dream with the demonization of entire groups as the “face of the enemy.”

_Beyond Manzanar_ uses the unique spatial characteristics of navigable 3D virtual reality to locate the audience members inside the Manzanar Internment Camp. As the audience explores the campsite, they experience the emotional impact of confinement. Confined within the camp, they have nowhere to go but inwards, into the refuge of memory and fantasy. At the heart of the piece, lies an image of

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paradise created as a refuge from the outside world. An edition of *Beyond Manzanar* is in the permanent collection of the San Jose Museum of Art.

*The Last Goodbye*, a virtual-reality film that brings the viewer inside a Nazi concentration camp with Holocaust survivor Pinchas Gutter, won a top prize at the 2018 Lumiere Awards hosted by The Advanced Imaging Society. In the film, powerful testimony of the tragedy of the Holocaust is preserved for the first time in poignant, room-scale VR, as Gutter takes audiences with him on his final visit to Majdanek Concentration Camp where his parents and sister were murdered during World War II. *The Last Goodbye* was created by award-winning filmmakers Gabo Arora and Ari Palitz; it was produced by USC’s Shoah Foundation. “Our ambition has been to create entirely an entirely new grammar for what's possible within a narrative and room scale mix, in a documentary format,” Arora said. The photo-real experience presents a new way of capturing the story of suffering and loss and holocaust testimonies.

Deepa Mehta’s narrative film *Earth* contextualized partition for my thesis work. It was a huge lesson to experience intergenerational trauma through a story of a little girl. The film itself was an adaption of Bapsi Sidwa’s novel, *Cracking India*.

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The 1947 Partition of India is the backdrop for this powerful novel and film, narrated by a precocious child Lenny Sethi who spends her days with Ayah, her beautiful nanny. Lenny learns about religious differences, religious intolerance, and the blossoming genocidal strife on the eve of Partition. As she matures, Lenny begins to identify the differences between the Hindus, Muslims, and Sikhs engaging in political arguments all around her. Lenny enjoys a happy, privileged life in Lahore, but the kidnapping of her beloved Ayah signals a dramatic change. Soon Lenny’s world erupts in religious, ethnic, and racial violence and the narrative drama serves as a microcosm for a profound political upheaval.

While I was borrowing from all the media works I mentioned above whether by “disrupting” technology or by way of experimenting with a new technology to revisit the past and ignite memories, my intent, overall, is to argue for a space for such marginal and forgotten experiences.

Yet, at the same time, I am challenging these works, especially the VR pieces, not in their approach but their limitations. I wanted Sandbox of Memory to be an accessible art project in terms of its making (free Unity software) and access. All in all, I perceive the thesis work as just another powerful intervention to open dialogues about important topics like forced migration, borderlands, memory and trauma, running parallel to the projects and ideologies of the artists mentioned above.
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