

Virtual Worldmaking: A Phantasmal Media Approach to *VRChat*

by

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Abstract

Social VR expresses human subjectivities on multiple scales, from within its computational structure to interpersonally between users. Theorizing bodies as situated, distributed, and imbued with affect, this thesis analyzes how the systemic proliferation of the “anime girl” avatar in the social VR platform *VRChat* reflects gendered biopolitics of power and control. Positioning contemporary social VR at a unique moment of media convergence and sociopolitical unrest, this thesis argues for more pluriversal negotiations of virtual realities through the lens of *virtual worldmaking*.

Drawing from cultural theory and D. Fox Harrell’s *phantasmal media framework*, I unravel the boundaries between subjective experience and computational modes of being at the perceptual interface of social VR. First, in two auto-ethnographically inspired close readings of my experience in *VRChat*, I find that despite positivistic promises of heightened social presence, social VR reproduces gendered exclusions and discriminatory representational norms in socio-technical ways. In particular, the technical form of the anime girl avatar reinscribes fantasy tropes about Asian women rooted in techno-orientalist cultural histories. Complicating notions of the “anime girl” avatar as a neutral, post-racial virtual citizen, I instead argue that practices of proliferating whiteness and appropriating bodies coded as female are well situated within the harrowing realities of globalization. Understanding that avatar bodies possess affective investments with operative power, a material history, and technical agency is essential to developing more co-creative approaches toward virtual embodiment. I propose *cybershamanic world-making* as a creative praxis for constructing new, embodied knowledges by centering cultural memory. To conclude, I then present my work *A Place of Care*, a VR performance that centers the contemporary realities of violence against Asian and migrant women to consider how a greater respect for issues of transnational identity could forefront engagements with virtual space.

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I. Introduction

The experience of Virtual Reality (VR) does not simply involve putting on a headset. It also requires engaging with cultural perceptions of the role that virtual media have in our lives, and between people, which in turn influences our experience within it. Virtual reality has long served as a cultural metaphor for the ideal of a complete immersion, a gaze that materializes a postmodern deterioration of what's real. By evoking the promises and politics of immersion, the interface of virtual reality engages multi-layered dynamics of subjectivity in highly concentrated and potentially illuminating ways. As both object and mode of inquiry in this thesis, VR is a tool for illumination.

Immersive media have been described by media theorists as implementing experiences of “immediacy,” or unified sensory experiences that erase the medium (Bolter and Grusin, 2003). Moreover, cultural logics of VR as an “empathy machine” promote a “touristic gaze” of racial Others, and white, colonial, male forms of virtual embodiment (Nakamura, 2020). When it comes to identity in VR, this type of total immersive experience has been termed as the Avatar Dream, defined as “the [culturally widespread] idea that, using the computer, we can imagine ourselves as whomever or whatever we want to be. It is the dream of using virtual identities to communicate with each other, share data, and interact in computer-based (virtual) environments” (Harrell and Lim, 2017). For some, this ideal for media to create completely immersive worlds and selves, realistic or completely different from the physical world, is intrinsic to what VR is. Yet, in line with Harrell and Lim’s argument that the Avatar Dream needs to be reimagined, dreams of complete, immediacy-oriented worldbuilding and the Avatar Dream are not only impossible, but antithetical to pluralistic values for others from non-techno-Eurocentric, cultural vantage points. In fact, such dreams, with their colonial, patriarchal underpinnings, may even be

experienced more as nightmares. This thesis explores why these perspectives offer different insights through key differences in their processing of sensory perception, affect, and action, and how such differences manifest through forms of agency and power dynamics in socially-networked VR (social VR). Analyzing immersion in contemporary times both in terms of media convergence and social unrest, I audit the current moment in social VR, a “new” media form that will not be new much longer and reorient its possibilities for virtual worldmaking.

Drawing upon fields ranging from cognitive science and digital media studies as well as contemporary art and cultural theory, this thesis offers an affect- and affordance-driven analysis of how social values take avatarized form in social VR. Taking a materialist view, I argue that bodily affect is intertwined with not only the affordances of social VR as a media technology, but also with the affordances of the digital bodies, or avatars, acting within it. Thus, separately from individual users' intent and actions, experience in social VR is uniquely mediated by the socio-technical dynamics formed within its discursive space.

In this thesis, I analyze how the technical properties and material history of the “anime girl” avatar¹ led to its proliferation in *VRChat*. More specifically, the anime girl avatar acts as an operative agent of techno-orientalism, whose armor is feminized to mass appeal and the reproduction of imperialist cultural logics. Avatar bodies, however, do not come from nowhere, simply waiting for users to animate them. Rather, avatar bodies are intertwined with the virtual space of cultural imagination, the digital space of social VR platforms, and the online infrastructures situated in media-specific histories. In the case of *VRChat*, the proliferation of

¹ Throughout this thesis, I use the term “anime girl” avatar for a dual reason. First, it is the term that is colloquially used by the English-speaking subset of *VRChat* users that I refer to. Although the anime “girl” avatar often is depicted with bodily proportions and sexual appeal that might seem to refer to adult women, bishōjo icons such as Hatsune Miku are often adolescent in age (Hatsune Miku is 16 years old). This reflects how the (cont. next page) anime girl also historically entangled with complex discourses of shōjo (which translates to “young girl” from Japanese and refers to manga or anime) and types of media involving the bishōjo figure.

anime girl avatars reflects not only the convergence of participatory online media with social VR technologies, but also the “stickiness”— saturation of affect and emotion— of anime girls in the fantasies of globalization.

I argue that a more intersectional feminist relationship with avatars first requires an understanding of the material histories from which avatar bodies are formed and a creative reimagination for what they could be. Social VR enables an individual to access a virtual realm animated by an amalgam of components and socio-technical forces, a mode of access that heightens the operative dynamics of subjectivity. As a form of virtual embodiment alternative to the Avatar Dream, I propose *cybershamanic worldmaking*, which situates virtuality in the violence of modernity and centers social and political memory to envision and impact the future. Emphasizing values of healing and care, my creative work *A Place of Care* is a VR performance responding to the realities of violence against Asian and migrant women in contemporary times, foregrounding my engagement with virtual space.

1.1 Social VR: Why Now?

For several decades, VR has been characterized by a disconnect between the cultural fantasies of the medium, as portrayed in popular culture, and the actuality of VR, as experienced by a much more restricted number of users within the confines of the walls of software developers, researchers, or interested consumers wealthy enough to purchase VR equipment. With such varied experiences of VR (and types of VR content) amongst its users, defining the nature and scope of the medium becomes tricky. Despite the critical work of media scholars, the field is still indeed saturated with market rhetoric about VR as an “empathy machine” (Milk, 2015) and with many representational exclusions carried over from video games (Williams et al.,

2019). Interestingly, the recent proliferation of consumer-grade headsets, however, has been gradually calibrating the gap between what we think and what we know about VR.

Perhaps unlike some prior moments of new media adoption, some of the social VR uptake in 2020-2021 has come more out of necessity than choice alone. With the global Covid-19 pandemic, the abrupt curtailing of in-person social life has arguably resulted in a collective sense of lack—a yearning for spontaneity, proximity, presence. As many have found, social VR serves this pragmatic desire. Pairing voice telecommunication with gestural interaction as avatars in virtual worlds, as is the case in social VR, produces a unique sense of spatial orientation. Beyond pragmatic, communication-oriented uses, in the realms of performance and digital arts, social VR enables artists to freshly consider topics such as the boundaries of embodiment, mechanisms of interactive feedback, and the liveness of social presence. Just as masks are used to create “alternative realities” (Buyandelger, 2020) and military uniforms dissolve personal identity into a collective, nationalist identity, avatars in social VR reifies social roles in its design that influence performances of subjectivity. While there are not yet shared conventions for social VR performance in a more theatrical sense, the accessibility of headset-based social VR platforms certainly makes such a virtual stage plausible.

Researchers and educators have also explored more functional use cases of social VR, such as overcoming geographical barriers in language learning, bringing students in the US and China together in a virtual classroom or conducting studio courses on Digital Media Performance. Programmers and curators of VR film festivals have also worked with developers to design and upload freshly made online versions of their exhibition halls. All in all, during the Covid-19 pandemic, many equipped with VR headsets and predisposed to online space-making

were able to resume their practices in existing multi-user platforms such as *VRChat* to generate exciting, collaborative work.

As schools, libraries, governments, and businesses quickly adapt to virtual life, a variety of virtual communication tools (be it live on Zoom, asynchronous video recordings, or immersive web platforms) have also offered nodes of reflection on what exactly fully embodied, spatial presence in social VR affords. In many ways, the Covid-19 pandemic has forced us to reckon with the biological nature of the human body, from its vulnerabilities within six feet's distance to the molecular particles dampening our masks. Gatherings on Zoom have often felt more functional than they have been enjoyable, and we are led to ask what it means to truly experience social life online. Looking at online gaming and participatory fan cultures offers a model from which to start.

1.2 What is *VRChat*?

VRChat is a free social gaming platform where users can use 3D graphical avatars to meet others, explore different worlds, and hang out. *VRChat*, often abbreviated as VRC, was first released in February 2017 on Steam, which is a cross-platform digital distribution service provided by the video game company Valve Corporation. Contrary to what its name suggests, VR gear is not required to play the game—desktop users on Windows make up around 85% of those playing (Straszfilms, 2020). That said, since its release and integration with the Oculus DK1 Development Kit, *VRChat* has enthralled those interested in virtual reality and its development.

"When I first started, there were like twenty people online," said Lycon, the creator of Void Club and several other popular "cyberpunk" and "science fiction"-themed worlds in

VRChat. “There were a lot of developers and developers of *VRChat* itself and we started making things in Unity slowly.”

Among these early adopters of *VRChat* were enthusiasts of cyberpunk fiction, such as the Japanese series *Sword Art Online*. Published in 2002 and set in 2022, the series takes place in various virtual reality worlds built by a game engine called the World Seed. Social VR essentially manifests this narrative. “People watching anime are the people invested into new technology,” claims Lycon in an interview, “We are all interested in *Sword Art Online* because it was a common topic especially people who started early on in 2017.” Full body tracking capabilities were then integrated at the end of 2017, and Lycon reports that it was mostly the Japanese audience using it at the time. To this day, internationally dispersed developers and companies drive innovations in *VRChat*, with Japanese company HIKKY hosting the annual Virtual Market (VKET), the largest event held in social VR where exhibitors display and sell 3D merchandise and congregates a global audience in *VRChat*.

Since its release, *VRChat* has become a playground for both experienced and first-time developers to construct 3D worlds where users could explore, play games, or host events. Regardless of experience in VR and VR development, users have pioneered various roles for their own interests and skill sets, ranging from 3D modeling avatars, community moderation on Discord, to hosting and live streaming talk shows on secondary media platforms like Twitch and YouTube. Today, the type of activities held in and broadcasted from *VRChat* truly run the gamut— from community meet-ups for budding 3D artists showcasing their work to karaoke bars and dance clubs with live electronic music.

Amidst all this bustling media activity, however, are everyday users. Because of its accessibility, *VRChat* is among the most popular social VR games, reaching 20,000 concurrent

users in 2018, with around 3 million registered accounts overall (Steam Charts, 2021). In the English-speaking domain, in which this study is based, you will find avatars, objects, and worlds that enmesh the imagination of multiple animated universes ranging from the Nintendo to Marvel franchise, cartoon characters from Winnie the Pooh to SpongeBob, and those from various manga or anime series. This is so because a key component of *VRChat*'s appeal is the ability for users to create their own avatars from scratch and be characters from games and media.

While shaped by activity outside the game space, the in-game space of *VRChat* operates much like a stage for performing online identities. While for some, it feels like a game, for others it is a living exhibition of co-constructed artworks for users to interact with. For others still, it is the backstage to a performance that will be later edited and showcased online. *VRChat*, then, is much like a bustling meeting point for digital travelers with diverse aims, a virtual crossroads of the post-human moment as much as it is a base for inner subjectivities that reside solely within the game. Each user is headed towards different destinations with meanings distributed across digital and physical sites. Their avatars embody just one piece of the assemblage of media their identity travels through.

1.3 Methodology

Drawing upon multiple disciplinary lines and forms of knowledge, I draw out both the expressive potential and limitations of subjectivity by using mixed methods including close readings of my own *VRChat* experiences, in which I draw upon methods from auto-ethnography and cultural theory and D. Fox Harrell's phantasmal media approach for analyzing and designing subjective computing systems. Integrating these approaches embodies the boundary between subjective experience and computational modes of thinking. Likewise, I focus on the

interrelationships between the body and digital space of social VR. These methods are supplemented with participant-observation, interviews, media analysis, and close readings of various scenes in *VRChat* and its sociodata ecology.

Through auto-ethnographically inspired writing, I immerse readers into social VR through describing (and analogously mirroring) my first encounters within it. This serves multiple purposes. First, it situates my position as a researcher and the social context from which this study emerged. Second, a narrative writing style detailing sensory experiences may help readers from various disciplines, many of whom likely have never tried VR, let alone social VR, to imagine the embodied dimensions of the medium, including the controls and mechanics, which are crucial foundations for analyzing avatar embodiment. Moreover, my descriptions reveal the contemporary commercial status for VR headsets, and how it uniquely architects 3D, graphical space.

While the sensorial-technological is only one dimension of immersion of social VR space, it defines the mode of being from which social worlds unfold. Thus, just as anthropologists have always immersed readers into distant cultures reflexively through their bodies, so too will I— but in my/a virtual body and the graphical space it walks.

In her ethnographic work *Crafting Selves*, anthropologist Dorinne Kondo problematizes the concept of “self” by unraveling the types of exclusions and hierarchies upon which this “self” is constructed. The notion of a whole “self,” she argues, does not account for the power dynamics involved in the production of selves, inscribed in structures such as language and aesthetics. Rather, she instead looks at selves as potential sites for “the play of multiple discourses and shifting, multiple subject-positions” (Kondo, 1990:44). Similarly, rather than

reinscribe notions of selfhood in “virtual worlds,” I focus on *virtual worldmaking*, or the cultural production of and negotiations between virtual realities, including my own.

Phantasms are “a kind of imagination, one that encompasses cognitive phenomena, including sense of self, metaphor, social categorization, narrative, and poetic thinking” (Harrell, 2013, p. ix). This concept enables the analysis of computational media, where cognition is distributed between human and nonhuman bodies. I employ two approaches to challenge negatively biased phantasms: (1) reveal phantasms (by showing them from multiple worldviews such that the assumptions in each become clear) and (2) create empowering phantasms through developing a design praxis. The phantasmal media approach uses both semiotic analysis and critical-computational design praxis to address and experiment with subjective computing systems, placing theory and praxis at equal weight. In *A Place of Care*, a VR performance, I apply a critical-computational design praxis to create a place of affective memory.

For my close readings, I selected key affective encounters centered on feelings of alienation. Notably, prior to this study I had no experience playing multi-user VR games or using 3D modeling software. For this reason, I took careful notes for my first encounters in *VRChat* and placed weight on the initial impressions. With these observations, I focused on how the disorientation of virtual identity reflected social processes of exclusion that privileged specific forms of virtual embodiment at a systemic socio-technical level. For my avatar, I used a variety of different generic public avatars with varying levels of self-identification, but ultimately my relation to my avatar was largely functional to enable the research rather than personal.

Throughout this period, I also learned how to use 3D modeling software and game engine such as Blender and Unity and embarked on a journey as a “maker” in *VRChat*. Doing so, I used learning resources to get started with *VRChat*, initiating my exposure to its avatar creation media

ecology. Relying on the YouTube search algorithm, I collected a sample of the most viewed videos using the search phrases: “vrchat avatar” or “vrchat tutorial” and “vrchat mmd.” In 2018, Safiya Noble articulated how "algorithms of oppression" filter information in discriminatory ways in online search engines (Noble, 2018). Similarly, my options for creating a custom avatar were quite constrained, with a material emphasis on male corporeal-visual pleasure.

My research period lasted roughly eleven months between April 2020 and February 2021, during which I attended several digital media courses, VR film festivals, casual events, live music events, club events, and theatrical performances. I also held in-depth interviews with community organizers and content creators, including club owners, media-makers, and some everyday users. I also interviewed *VRChat* users like myself who were exploring the medium from research or industry-oriented angles, such as new media artists, ethnographers of *VRChat*, and digital media scholars. These interviews were usually conducted on video conferencing platforms, paired with participant-observation in *VRChat* during live events.

I selected *VRChat* as the case study platform because of its popularity as a social VR game and its representational value as a socio-technical system well integrated across media platforms. In a comparative study of five different social VR games, *VRChat* was unique in its non-normative social interactions and performative memes, in which interactions can feel like social experiments where participants take on personas or explore embodied rituals (McVeigh-Schultz et al., 2018). Just as *VRChat*'s system affords creative freedom at the technical level, the identity of the game and social behaviors of its users also exhibited a general spirit of experimentation. Moreover, the *VRChat* media ecology includes users engaging with the game system at multiple levels, including an assemblage of media including Twitch livestreams, YouTube videos, instructional tutorials for making 3D models, and online forums for developers,

and social communities on the platform Discord. In sum, *VRChat* is constructed by a constellation of socio-technical factors and that offer insight to the making of virtual worlds.

1.4 Thesis Overview

This thesis focuses on virtual reality as both a mode of inquiry unfolding in real time and a media object to analyze. While my use of the terms *virtual reality* and *virtual worldmaking* refer largely to contexts in computational media, more fundamentally, “the virtual” is theorized as a space of emergence afforded by the essence of reality. In Chapter 2, I first describe subjectivity as an immersive experience, positioning the body as the essential medium that links sensory perception and possibilities for action. Embodiment, as I elaborate, is also mediated by cultural and media-specific contexts— in other words, the “virtuality of culture” that ascribes values to bodies, objects, and ideas in circulation, such as in constructing racial “Others.” Then, I describe VR experience as another immersive context, challenging how its status as new media still privilege traditions in Western art that privilege a singular point-of-view. Social VR combines these new media logics at its interface.

This thesis then analyzes social VR as a *subjective computing system*, interpreting its agency as a computing system that expresses human subjectivities (Harrell, 2013). Combining the phantasmal media framework with cultural theory, my analysis will focus on three body-centric concepts at the perceptual interface: *affordances*, *affect*, and *agency play*. While Chapter 3 focuses on the body interfacing with social VR, Chapter 4 focuses on the avatar body, more specifically, how the aesthetic and technical form of the anime girl avatar privileges whiteness and the male gaze. Moreover, the cultural production of anime girl avatars reinscribes fantasy tropes about Asian women driven by commercial capitalism, otaku fan culture, and soft power initiatives in Japan. In Chapter 5, I propose *cybershamanic worldmaking* as a creative-

computational praxis and analyze *A Place of Care*, a VR performance, as an alternate expression of virtual embodiment.

Chapter 3 “Analyzing *VRChat* as Phantasmal Media” highlights the problems of the Avatar Dream and of conceiving of “virtual worlds” separately from the bodies constructing them. In my close readings of experience in social VR, I find that the possibility for social inclusion comes with a price—virtual embodiment in *VRChat* requires an active learning of norms and rules that involve adjusting to the technology and platform as much as its social customs. Moreover, the interface of social VR provokes sensorial-technical affects that operate on the user’s body. Through affect and affordances, social VR socio-technically reproduces social exclusions in discriminatory ways. In particular, despite its promises of boundless sociality and heightened presence, functions such as voice-chat and gestural-spatial interaction have been exploited for gendered harassment, dominant group behavior, and racial performativity. A key insight from these findings is that social VR heightens individual worldviews and a culture of performativity through the immediacy of VR and the hypermediacy of embodying an avatar. This performance culture can either remediate cultural biases, such as racism in online media cultures or be strategically used to produce empowering cultural phantasms.

Questioning *VRChat* as a computing system that reinscribes techno-orientalist worldviews, I analyze the socio-technical systems that proliferate the anime girl avatar in *VRChat*. Chapter 4, “Analyzing the ‘Anime Girl’ Avatar,” looks at how its cultural logics are reflected in the material form of the avatar itself. Deconstructing the data structure of the anime girl avatar as a 3D model (.mmd), I trace the social history of the MikuMikuDance (MMD) software, participatory fan culture, and its convergence with *VRChat* positioning the avatarization of anime girls at the heart of digital consumerism, global capitalism, and soft power

initiatives. I argue that the MMD-VRC avatar privileges whiteness and the male gaze in their aesthetic and technical form. More specifically, its skin tone and gender operate as aesthetic technologies that reinforce techno-orientalist ideologies. I argue that the systemic proliferation of the anime girl avatar reproduces issues of representation in cyberpunk media and reinscribes bishōjo fantasy tropes about Asian women.

Complicating notions of the anime girl avatar as a neutral, post-racial virtual citizen, I instead argue that the practices of proliferating whiteness and appropriating bodies coded as female is well situated within the harrowing realities of globalization. Moreover, avatar bodies themselves possess affective investments with operative power, enacting ideologies such as techno-orientalism in virtual space. The avatarization of anime girls reveal the need for more co-creative approaches to virtual embodiment. Toward this end, I propose an alternative vision of the agency of digital objects (and haunting remnants of its history) through the imagery of a ghost, who I name *the Shōjo Ghost*. Inspired by feminist performance art and cybershamanic worldviews, the Shōjo Ghost reflects a move toward *cybershamanic world-making*, a creative art praxis drawing inspiration from contemporary shamanic worldviews and its engagements with new media. This approach centers social and political memory in imagining the future, actively exorcising damaging forces of modernity through storytelling and the construction of new embodied knowledges. To conclude this thesis, I present my creative work *A Place of Care*, which centers the contemporary realities of violence against Asian and migrant women to consider how a greater respect for issues of transnational identity could forefront engagements with virtual space.

Virtual space is a collision of various types of imperial and exclusionary forces such as Eurocentrism, techno-orientalism, and the male gaze. As Hito Steryl articulates in a 2021 speech

at MIT, we need to “decolonize the digital sphere,” not only metaphorically, but also by first considering the digital as a domain of the real (Stery, 2021). This thesis and *A Place of Care* argue that virtuality is a space grounded in the inseparable relations between mental imagery, bodily affect, and possibilities for action. Virtual worldmaking begins by making transparent these interrelations and aspires to reimagine our conception between these realms.

II. Theoretical Framework

In this chapter, I establish the theoretical framework for analyzing the social and technical dynamics to avatar embodiment in *VRChat*. These processes are entangled at the production of subjectivity in virtual worlds, which I term as virtual worldmaking. *Virtual worldmaking* is an active process of constructing both present and future. It also is intersubjective and situated in a reality that involves multiple actors and objects. Similar to “worldbuilding,” which elaborates the construction of imaginary worlds and fictional universes (such as in literary fiction, role-playing games, and other media),² worldmaking is also concerned with imagination, particularly the social imaginary and the various processes of power it engages. Responding to the uniquely embodied status of digital avatars in social VR, my use of the term virtual worldmaking emphasizes the embodied sensibilities of performing identity.³ My use of the term virtual worldmaking thus considers the added dynamic of worldmaking with computing systems, including materials such as graphical 3D models and media technologies.

That said, the term virtual is not inherently about computation, nor is virtual reality inherently about technology. To briefly expand on my use of the term “virtual,” let us consider how the term “virtual reality” refers to a temporal state as much as it does a conceptual or digital space. In Western thought, the “virtual” stemmed from Aristotle's use of the term to describe

² Worldbuilding is defined as “the process of constructing an imaginary realm, a process we see regularly in a range of different contexts, each with their own caprices, e.g. cinema, video games, and role-playing games” (Coulton et. al., 2017, p.14).

³ While worldbuilding is a term largely coming from media studies, my concept of worldmaking draws from performance studies. Dorinne Kondo writes on how structures of power, labor processes, and performances of subjectivity are linked in the theatre industry, a process she describes as “worldmaking” (Kondo, 2018). Kondo’s concept of worldmaking is one that is updated from her concept of “crafting selves” (Kondo, 1990); while worldmaking is concerned with the production of multiple subjectivities, crafting selves emphasized questions of identity and self-recognition

“the multitude of possible states that any entity may experience, circumscribed by the essential” (Goodrich, 2002). In classical philosophy, the virtual conceptually links the essential nature of being to the potential states of being. Materialist philosopher Elizabeth Grosz adapted this idea to conceive of the virtual in relation to how the materiality of objects, such as the biological body, organizes space and time in ways that shape subjectivity and knowledge, as is the case with sensory perception. The term “virtual reality,” a reality that is virtual, refers to an instance of reality that is latent in the present but does not yet exist, gesturing to a process of emergence. As Grosz writes:

“the virtual reality of computer space is fundamentally no different from the virtual reality of writing, reading, or even thinking: the virtual is the space of emergence of the new, the unthought, the unrealized, which at every moment loads the presence of the present with supplementarity, redoubling a world through parallel universes, universes that might have been” (Grosz 2001, p. 77).

For Grosz, virtual reality is thus both a space of the imagination and a temporal essence. Bearing this in mind, my use of the term *virtual worldmaking* refers to the active construction and expression of virtual realities and acknowledges the inherent interconnectedness between multiple realities in imagining the future. “Making,” in virtual worlds or otherwise, link “structures of power, labor processes, and performances of gendered, national, and racialized subjectivities, in historically and culturally specific settings” (Kondo 2020, p. 6). Virtual realities are in constant negotiation with each other to construct what is, in an ideal sense, described by subaltern thinkers such as Arturo Escobar as a “pluriverse,” a “a world where many worlds fit,” meaning that they “co-exist with dignity and peace without being subjected to diminishment, exploitation, and misery” (Kothari, et al. 2019). Virtual worldmaking is the construction of the social and future imaginary. My vision for virtual worldmaking holds with it the epistemological

groundings and political hopes of building a pluriversal world by considering how technologies of modernity evoke and reproduce power dynamics in media-specific ways.

2.1 Subjectivity as Immersive Experience

Virtual Reality (VR) as a media technology affords experiential immersion in a way that engages multi-layered dynamics of subjectivity in a highly concentrated and potentially illuminating way. VR evokes the promises and politics of immersion. Likewise, as an object and mode of inquiry in this thesis, VR serves as a tool for illumination. To this end, my theoretical framework involves three interconnected modalities of immersion—bodily immersion, cultural immersion, and medial immersion—and their entanglements with constructing racial and gendered “Others.”

For *bodily immersion*, I draw from theories of embodiment shared by new materialist philosophers and the cognitive scientists of second-wave cybernetics to establish the intrinsic link between sensory perception, subjective knowledge, and possibilities for action (Grosz 1994; Haraway 1998; Maturana and Varela 1984). Notably, the concept of bodily immersion is also widely shared in subaltern epistemologies (Kothari, et. al 2019), including those in indigenous shamanic practices, which I later elaborate in my concept of *cybershamanic worldmaking*. Considering knowledge as partial, situated, and embodied is an onto-epistemological principle with ethical stakes,⁴ my theoretical foundation, methodologies of inquiry, and research findings are also best considered as intrinsically connected through my subjective interventions as

⁴ Feminist technoscience theorist Donna Haraway displaces claims over objectivity and the use of “technologies of domination” in favor of partiality and “situated knowledges” (Haraway 1988). Similarly, to Haraway, Grosz views ontology and ethics as intertwined (“onto-ethics”), extending the concept to “onto-aesthetics” to describe the capacity to understand the production of an object with qualities that produce affects (Grosz 2017). The new materialist approach investigates the interrelationships between epistemology, ontology, ethics, and politics as what produces meaning.

researcher, as body. Through my creative practice, I also engage in the production of affective and embodied memory.

The body is the “primary sociocultural product” that mediates between the subject and its biological and social environment (Grosz 2001, p.31). To unpack this further, let us consider feminist philosopher Elizabeth Grosz’ concept of “*the body phantom*”:

"the body phantom is the condition of the subject's capacity not only to adapt to but also to become integrated with various objects, instruments, tools, and machines. It is the condition of the body's inherent openness and pliability to and in its social context" (Grosz 2001, p. 31).

The “stuff of subjectivity” consist of multi-layered interrelations with the sensorial body; “bodies are always understood within a spatial and temporal context” which “remain conceivable only insofar as corporeality provides the basis for our perception and representation of them” (Grosz 2001, p.84). Similarly, cognitive biologists Humberto Maturana and Francisco Varela theorize the “inseparability between a particular way of being and how the world appears to us” through the concept of “autopoiesis” (Maturana and Varela, p. 26). Autopoiesis proposes that the structure of the nervous system of living organisms predispose how it receives stimuli in “sensory-effector correlations” at cellular levels (Maturana and Varela, p.166). Both approaches, one from philosophy and the other cognitive biology, propose subjectivity as entangled with embodied material processes. Particularly in the contemporary Information Age, subjectivity is formed by “cognitive assemblages,” in which cognition is distributed in systems including “circuits between sensors, actuators, processors, storage media, and distribution networks” that include “human, biological, technical, and material components” (Halyes 2017, p.2).⁵ Both

⁵ Likewise, new materialists view an object of knowledge as another type of body, an "active, meaning-generating axis of the apparatus of bodily production" (Haraway 1991: 200). Bodies here are conceived of as boundary projects that materialize in social interactions. Affect, as I later articulate, is key to the making of boundaries. Virtual reality participates in various boundary projects that intersect at its interface, a matrix of material-semiotic nodes each worthy of elaboration.

nonhuman and human bodies are agents. My notion of virtual embodiment works in a similar way. Embodiment occurs not only through materials of everyday life in the physical world, but through experiences of virtuality such as those in computational media or imaginative worlds.

While bodily immersion emphasizes the sensorial and phenomenological (through perception), and ethical (through action and their impacts) domains of subjectivity, *cultural immersion* refers to the socio-cultural lenses that filter and shape subjective experience, such as ideology and hegemony. For my discussion of virtual worldmaking, which involves a relation to computation, I draw from postmodern theorists who describe contemporary techno-scientific society as immersed in a “condition of virtuality,” or the widespread cultural misperception of the world as a series of informational patterns rather than in its material actuality (Hayles, 1999), a condition that has also been described as the “hyper-real” or “society of the spectacle” (Baudrillard, 1987; Debord, 1967) in the context of late capitalism.

The cultural logic of virtuality, however, also functions in specific, historically situated ways, such as against groups of a particular race or gender. Toward this end, I draw from critical race studies and cultural theory to describe the construction of racial and gendered “Others” in hegemonic ideologies, such as through reductive portrays of Asia, North Africa, and the Middle East in conceptions of “the Orient” (Said, 1978). Virtual worlds participate in a particular type of Orientalism: “the high-tech Oriental is always identified as the denizen of the most threatening economic and technological superiority” (Chun, 2008, p.196). Differently to Orientalism, which “arrests Asia in traditional and often premodern imagery,” techno-orientalism “assigns technological and thus inhuman characteristics” to Asian people. For Kevin Moley, David Robins, Toshiya Ueno, and Kumiko Sato, the term “techno-orientalism” refers more specifically to orientalist discourse surrounding post-World War II technological advancements and the

economic boom in Japan. Techno-orientalist depictions of Japan as "the figure of empty and dehumanized technological power," not only reflect the anxieties of the West losing its hegemony but also Japanese imperialist visions for the future (Morley et. al, 1995). In this sense, techno-orientalism's globalized discourses are co-constructed beyond nationalist boundaries by neoliberal flows of information and capital. As David S. Roh, Betsy Huang, and Greta A. Niu articulate:

"Technological developments, driven by the imperial aspirations and the appetites of consumerist societies on both sides of the Pacific, propel the engines of invention and production. In its wake, Western nations vying for cultural and economic dominance with Asian nations find in techno-Orientalism an expressive vehicle for their aspirations and fears" (Roh et al., 2015, p.3).

Techno-orientalism is found through popular media, such as in cyberpunk science fiction genres and advertisements, and reflect cultural fantasies and anxieties about the future. As Chun argues, "high-tech orientalism" and the use of "half-breed" and multi-racial characters often manifest in female bodies in dehumanizing ways. For instance, 1984 American science fiction novel *Neuromancer* and 1989 Japanese manga *Ghost in the Shell*, both involving virtual reality, "reorient (and hence produce) the self by turning economic threat into sexual opportunity" (Chun, 2008, p. 179). In this way, not only the raced, but gendered Asian body face exclusions in popular conceptions of virtual reality and cyberspace, saturated with techno-orientalist cultural logics.

As articulated thus far, subjectivity is immersed in various bodily and cultural contexts. I have established how perception, subjective knowledge, and action are intrinsically intertwined not only in philosophical principles of material life but also the biological structure of the body itself. The experience of virtual reality as a media technology engages with these multi-layered dynamics to subjectivity in an illuminating way.

2.1.2 Virtual Reality as Immersive Media

To think about *media immersion*, I draw from digital media theory and contemporary cognitive psychology scholarship that describe how a sense of “presence” is created by VR in way specific to its material-specificities as new media. Some predominant aspects of immersion in VR include linear perspective, immediacy, and perceptual realism.

Virtual reality technologies are a manifestation of Western visual culture that privileges the single-person (white, male, colonial) observer. The invention of linear perspective, a foundation of Western visual art, led to the design of illusions that privilege a single point-of-view (Lorenzin, 2021). Similarly, in VR, visual stimuli come from one visual dimension centered around the observer in a linear perspectival view, one that risks replicating the cultural fantasy to control space, information, and identity in the same ways as patriarchal and colonial worldviews (Hillis, 1999). The linear perspectival view underlies a style of visual representation that media theorists Jay David Bolter and Richard Grusin term "immediacy," which aims "to make the viewer forget the presence of the medium (canvas, photographic film, cinema, and so on) and believe that [the viewer] is in the presence of the objects of representation" (Bolter and Grusin, 2003: 272). Immediacy privileges the modernist desire for a unified perspective, one expressed in aesthetic styles such as “perceptual realism” which Deniz Tortum argues limits the creativity of VR (Tortum, 2017:18).

The dominant (and now highly contested) trend in VR for the past five years has been to imagine it as an "empathy machine," relying on naturalist and techno-determinist notions of embodiment that rely on a singular gaze. Particularly apparent in documentary and journalism, VR works which attempt to “automate empathy” for stories of marginalized people often reinscribe the “touristic gaze” of a white, colonial position (Nakamura, 2021). Far from a neutral

technology that objectively depicts the real, virtual reality and its narrative content suggest particular forms of embodiment and engagement.⁶ Cognitive psychology research demonstrates that a heightened sense of presence from the realism of technology alone does not guarantee that a user will feel involved and interested in the content (Dow, et. al 2007). The contextual and personal nature of immersion, which also depends on highly subjective metrics such as the user's intentions and expectations, require a balance of presence and engagement for meaningful play. Embodiment in VR is produced from situated sense-making processes (Reinhard and Dervin, 2012), and users process their body's immersion at a cognitive dimension that includes awareness, empathy, and context (Shin, 2018). In fact, according to a study comparing four different interfaces to the same interactive drama, the immediacy of the interface interfered with several players' ability to experience the game as a play space. For this reason, these players preferred desktop interaction specifically because it is less immersive, making it easier to take on different personas and providing a safe distance from the emotionally charged drama (Dow et al., 2007). In fact, counterintuitively, simulations that are felt to be "too real" may disengage its participants; after all, someone may just as well take their VR headset off altogether just as they might cover their eyes and ears in a horror movie.

Social VR, I argue, presents a strikingly new mode of audio and visual immersion that places "liveness" as its primary mode of interaction and remediates the gaze of first-person shooting games. The social imaginary is given form through graphical imagery, animated by agents in virtual space. While social VR is mostly associated within a tradition of multi-user

⁶ To drive home this point, another example is that conceiving of virtual reality pornography as "closest to the real thing" presumes a particular type of sex that is grounded on centering visual pleasure through the male gaze, corporeal realism of external anatomy, and the single (male) subject in control. Not all VR content, however, uses the "empathy machine" logic in a problematic way and many don't rely on it altogether, in favor of aesthetic devices and principles that reflect co-creative production processes and values, pioneered by initiatives of Black and Indigenous artists and women of color, such as the VR industry diversity and equity project *Making a New Reality* by Kamal Sinclair (Sinclair 2018).

online games, including first-person shooting games, it also marks a unique point of convergence between social media and online voice/video teleconferencing, both of which had only been around for less than the past two decades. Interestingly, the unique blend of voice chat and visual media technologies in social VR is predicated on not only immersion, but real-time immersion, harkening back to an earlier media history of telephony, television, and the emergence of telecommunications more broadly, coupling the military-industrial history of telecommunications and contemporary social VR culture.

Social VR blurs the perception of social reality at the level of user interface. While VR reflects the logic of immediacy, social VR reflect the logic of “hypermediacy,” which refers to the hyper-conscious of the mediation. Associated with the postmodernist desire for fragmentation and disruption, a deterioration of signs as previously discussed through the “hyper-real,” the paradox of these two logics (“the double logic of remediation”) is that they aim to achieve immediacy and authenticity, which are opposed to mediation, through the very mode of media (Bolter and Grusin, 2003, p.272). As theorized by media scholar Henry Jenkins, media convergence “alters the relationship between existing technologies, industries, markets, genres and audiences” (Jenkins, 2004, p.34). The media convergence of social networking, telecommunications, and VR technology in social VR raises new questions about dynamics behind the user interface that mask socio-technical relations between avatar and virtual world, and construct meaning.

In this sequence of bodily, cultural, and media immersion, each theory builds upon each other, enfolding its political stakes while introducing the media specificity of social VR. Virtual reality, I suggest, manifests bodily, cultural, and medial modes of immersion at an experiential

level that when deconstructed and demystified, can be a particularly expressive tool for both exposing and reimagining subjective and cultural relationships to embodiment.

2.3 Phantasmal Media Approach

As computer scientist, artist, and media theorist, D. Fox Harrell has pioneered a situated methodology for critically analyzing how cultural systems are embedded in computational media and for designing socially empowered media. Considering computational media such as interactive poetry, multimedia, games, and installations with algorithmic (or AI-based) components, Harrell establishes foundational concepts to describe how values systems are structured within computational behaviors and how users interpret them. The phantasmal media approach focuses on cognition as “embodied, distributed, and situated” which in many ways commits to the aforementioned philosophical and theoretical trajectories by acknowledging the plurality of worldviews and offering strategies to critically interrogate them (Harrell 2013, p.30).

Phantasms, a concept rooted in cognitive and computer science, describe how human imagination is tied with subjective worldviews by combining sensory or mental imagery (“immediate, remembered or elaborated sensory perceptions”) with conceptual ideas from particular epistemic domains. The term phantasm itself evokes multiple fields of knowledge, ranging from cognitive psychology (phantom limbs) to materialist philosophy (body phantom) to folkloric manifestations (a phantom ghost), evoking both a linguistic and metaphorical continuity in human imagination. Most centrally, it concerns the body, and the embodiment of ideas (Harrell).

Phantasms emphasize “the subjective, mysterious, and invisible nature of widespread cultural images,” and people cannot pin down precisely how they came to be possessed by a particular phantasm. Phantasms can be shared among groups of people (“cultural phantasms”), in

which case, often is made apparent only when in contrast to multiple worldviews (Harrell). The phantasmal media framework anchors our discussion on the imaginative interface between human cognition and the subjectivity of computational media systems. Three key aspects of embodiment will be centered in this thesis: affordance, affect, and agency.

2.4 Key Concepts

2.4.1 Affordances

The relationship between the body and the perception of its surroundings involves affect and affordances. Ecological psychologist J.J. Gibson coined the term "affordance" to explain how meaning is perceived by environmental stimuli directly, rather than through additional mental processing. (Gibson, 1979). In Gibson's conception, affordances are intrinsic to nature. The way affordances describe the relationship between an actor and their environment, especially in regard to action and perception, makes it a salient term in human-computer interaction, a field invested in designing and analyzing computational "environments." In this context, Donald Norman proposes the term "perceived affordance" to refer more specifically to the way an interactive mechanism makes itself perceptible, such as through a signifying "Click Here" text next inside a button that launches to a web page. Differently from affordance, perceived affordance places an emphasis on how perceptual information is not only linked to possibilities for action, but in the case of design, particular types of desired action. Thus, perceived affordances are linked to "signifiers" that suggest how objects should be interacted with (Norman, 1988).

To ask what avatar bodies in social VR afford, I will employ both terms. While the notion of perceived affordances enables my analysis of the values (and biases) inscribed in the design of computational objects and systems and how they're used, Gibson's concept of affordances more

so accounts for the possibilities for action that may be hidden or yet to be formed. Recalling the materialist feminists, the virtualities of the present are loaded with possibility, and in the feminist ethos, possibilities for care and inclusion. These possibilities unfold through perceptual relations –affordances— to form human experience.

2.4.2 Affect

While affordances describe the nature of a relationship between bodies and space, affect is key to the making of boundaries by specifying how emotion moves between objects. The term affect is often used to describe how one is being affected, evoking a bodily responsiveness to the world. While affect is often mistakenly used interchangeably with emotion, affect more so describes the encounters between bodies at the level of flesh and sensation. How things are given value, on the other hand, is defined by emotion, a term that cultural theorist Sarah Ahmed employs to emphasize "the histories that preceded and directed [affective] encounter[s]" (Ahmed, 2014:97). In other words, "emotions accumulate over time, as a form of affective value," which Ahmed also describes as "stickiness."

"I suggest that it is the objects of emotion that circulate, rather than emotion as such. My argument still explores how emotions can move through the movement or circulation of objects. Such objects become sticky, or saturated with affect, as sites of personal and social tension." (Ahmed, 2004:11)

Through this relation between emotions, objects, and affect, Ahmed describes how emotions are actively produced and move "between the psychic and the social, and between the individual and the collective," a process that involves exclusions as much as it does the feelings themselves.

Drawing from psychoanalysis and Marxism, she argues that 'feelings' become 'fetishes' through the erasure (or repression) of an object's history, such as that of its production and labor (Ahmed 2004:18). Therefore, feelings, such as those about identity, are co-constructed with cultural

dynamics that are "tied to a past history of readings" such that "the process of recognition (of this feeling, or that feeling) is bound up with what we already know." For example, the experience of racial affect from being a minority in a white space may be provoked by past experiences of hurtful microaggressions or perhaps abject acts of prejudice. Importantly, much like the cognitive biologists' notions of autopoiesis in which organisms form structural couplings with their environment based on their history of recurrent actions, affect emphasizes memory as not only felt, but physically embodied.

This idea of embodied memory is further shared by behavioral psychologists exploring the clinical use of VR, such as for mental health or for treating addiction, as much as it is confirmed by women reporting that trauma can be triggered by sexual harassment in VR. Moreover, for better or (more likely) worse, biometric analysis such as eye-tracking reflects a degree of predictive potential in VR. While perception and meaning are highly variable by person and cultural context, VR arguably produces a degree of technically-induced affect at the level of bodily immersion.

In this thesis, two key affective encounters are at play. The first is between the body and VR technology, largely researched by cognitive scientists and psychologists on sensorial-technical terms. The second is between the body-in-VR and the socio-technical world of *VRChat*, composed of an assemblage of 3D artifacts, music, text, videos, UI, voices, and avatars animated by users. Centering affective encounters and the boundary between bodies, virtual worldmaking raises questions of agency: who has it and who doesn't, and to what degree?

2.4.3 Agency

Agency is a highly situated, boundary project. According to linguistic anthropologist Laura M. Ahearn, agency is "the socioculturally mediated capacity to act," and is located in

particular contexts with a range of actors and epistemological worldviews. Types of agency can range from Western colonialist worldviews of agency as "free will" or to agential properties of materiality itself. The absence of agency may also be a point of discourse. Different notions of agency have serious political stakes and are best conceived in relation to structures of power. As Ahearn urges, agency requires definition (Ahearn, 2010).

In computational media, agency is understood as an interaction mechanism with systemic constraints and possibilities that manifest at both the side of the user and the system. As Harrell writes, "user agency is situated materially in the mechanisms for user action within computing systems and interpretively in the context of phantasms prompted by use of those mechanisms." (Harrell 2013:264). Systems agency is the "capacity of a computing system to modify content (data) and to enable users' actions," and is based in human interpretation and implementation. In this way, user agency and systems agency are tied together and involve the other. According to Harrell, the interpretive register of the user's own sense of agency and how it influences their actions situates agency beyond its specific interaction mechanics and within a broader society that informs the values of the game. Likewise, the subjectivity and "agency" of computing systems is defined by design principles and sociotechnical values, as embedded in its perceived affordances and enacted by users.

III. Analyzing *VRChat* as Phantasmal Media

3.1 History of Multi-User Virtual Worlds

Throughout the past two decades, sociologists and game scholars have theorized multi-user virtual environments as a cultural domain of sociality, identity formation, and shared spatial relations. Not only do digital objects, such as avatars, hold a “symbolic significance” that mediate meaning between physical and digital spaces, but they also enable the production of “embodied presence” beyond representation (Jakobsson, 1999; Taylor, 2002). As T.L. Taylor articulates in her book *Play Between Worlds*, the sense of presence is not built by simply mapping the self onto the digital screen, but more so through the use of “body as material” in the performance of identity and social life (Taylor, 2006). In emphasizing how immersion is largely produced as a social phenomenon rather than exclusively sensorial-technological, Taylor insightfully elucidates the multi-dimensionality of presence in both an abstract sense, of social relations, as well as a literal sense, within 3D graphical images. These dimensions intersect to produce subjectivity, spatiality, and cultural systems in virtual worlds, which can be understood through both experiential and infrastructural domains.

In effort to establish multi-user “virtual worlds” as legitimate places for ethnographic inquiry, however, some key studies have inadvertently reinscribed classical notions of identity and place as fixed, enclosed constructs. “Place, above all else, makes virtual worlds what they are,” writes Tom Boellstorff in his seminal ethnography of the multi-user game *Second Life* (Boellstorff, 2015). Spatial representations within virtual environments, however, are often taken at face value in a linear perspectivist view, which relies on sight as the unitary access point to place, taking the screen as a window that fully immerses one into a “virtual world.” A linear perspectival view, however, risks replicating the cultural fantasy to transcend one’s physical

body and have a separate virtual existence, a tendency well documented in virtual reality scholarship (Hillis, 1999) and articulated in relation to notions of “identity tourism” in critical race studies (Nakamura, 2002). Not unlike the American frontiersman or colonial anthropologist, this cultural desire to control space, information, and identity through vision manifests in the linear perspectival view. Place is taken as non-situated, ahistorical, and defined by the individual doing the place-making, a colonial notion that views land as abstracted from its materialist, as terrain not yet conquered.

A parallel to the linear perspectival view, in regard to virtual identity, is the “Avatar Dream.” Virtual identities, however, are constrained by “box effects,” which refer to the inequity of systems that classify people, which include phenomena such as “stereotypes, social biases, stigmas, discrimination, prejudice, racism, and sexism” (Harrell and Lim 2017, p.52). Understanding personhood through the lens of personal choice and authenticity, as in the Avatar Dream, presumes the virtual realm is unconstrained by cultural imagination and risks conceptualizing virtuality as a domain separate from that of race, gender, or other structures underlying virtual life. Moreover, it overemphasizes the role of consciousness in the process of embodiment, which postcolonial and postmodern scholars have long argued against. The individual experiential domain of virtual life is certainly important, but it needs to be as a component of subject formation in virtual worlds, rather than its foundation.

A more complete encapsulation of virtual worlds and virtual identity must first problematize notions of place as abstract and rather situate it within a culture of virtuality composed of multi-various processes of place-making at individual, object agential, and media infrastructural levels. Likewise, virtual identities are constrained by socio-technical systems and best considered through the lens of embodiment: as fluid and in flux, with various power

dynamics at play. To resolve these tensions, I propose virtual worldmaking as a theoretical emphasis. Virtual worldmaking better accounts for how culturally based phantasms develop and evolve across contexts and worldviews.

For virtual worldmaking, the materiality of avatar bodies must be reconceived. Avatars have been largely conceived of as either digital representations of the Self or "vehicles" for performing cognitive tasks (Black, 2014). In both cases, avatars are embedded in a cultural logic predicated on Cartesian divides between mind and body. The material lives of digital objects (and oftentimes, the fellow user behind the screen) are often reduced to the mental projections of the user controlling the avatar or singular point-of-views. Conceiving of avatars as pawns to manipulate and instrumentalize, rather than agents to co-create with, reflects gendered biopolitics of power and control. In this way, how we relate to digital objects has a direct ethical and political stake for human sociality.

Rarely do we see studies of the history and cultural specificities of a digital object itself, before it has been altered and remixed into the social context it was encountered. T.L. Taylor's theorization of digital objects, or bodies, as "material," however, sets important groundwork for its situated, procedural, and contextual nature. In her study of the game, *Dreamscape*, Taylor describes avatars as "almost autonomous" figures (Taylor, 2002). Affordances of the digital avatar, such as how it completely veils the physical user behind it, and the multiple meanings generated by its new material life generates situations beyond the user's intentions, expectations, and control. The avatar's body is an active agent that shapes social experience.

The user-generated environment of *VRChat* and its uniquely integrated media ecology offers an opportunity to consider the production of digital artifacts differently from prior studies of screen-based virtual worlds. Digital artifacts in *VRChat* travel transnationally and across

media systems, through participatory online cultures and into the 3D graphical space. In this way, the material history of digital bodies and objects are made more apparent, allowing for theoretical intervention of its affective role in virtual space.

Interestingly, these material histories affect the VR interface in a perceptual way. Virtual Reality as a new interface to multi-user virtual environments quite literally brings to the fore the multi-layered dimensions of placemaking, and the subsequent ambiguities of virtual life. The sociality of users, their avatars, and its intersections with the historicity and cultural production of the 3D graphical space uniquely facilitates the embodiment of digital objects, avatars, and cultural systems.

Considering the perceptual interface brings us back to the corporeal dimensions of our relationship to computational media and its media specificities. Until recently, popular multi-user virtual environments have been accessed through a keyboard and mouse on two dimensional screens, forming disjointed relationships with an avatar's body in a way that privileges the linear perspectival view. In T.L Taylor's analysis of the corporeal dimensions of multi-user virtual environments and practices surrounding games, she looks at the interrelated phenomena of both online and offline life by centering on its spaces of overlap. In her study of *EverQuest*, Taylor notes the stark contrast between adventuring in a virtual realm and sitting upright at her desk; as she puts it, "our corporeal bodies conspire against or play catch-up to our digital ones." As she reports, the high-end graphics, constant motion, and game locales of *EverQuest* gave her motion sickness during the first couple weeks of playing the game, giving her a keen, embodied awareness that she was indeed "playing between worlds." Participating in the digital realm requires an intentional, "code-switching" between worlds, learning the language, pace, and visual culture of computational devices.

Notably, the technological landscape has changed since Taylor had first encountered and written about *EverQuest*, yet her emphasis on embodiment colors the tone of my own impressions of the boundary between virtual and physical worlds. When beginning my research in *VRChat*, I also had several instances of motion sickness from in-game movements (such as from my avatar jumping up and down whilst I'm seated) or nausea from absorbing the heat emitted from my overworked computer. The disorienting process of adapting to a new technology before entering a virtual world certainly foregrounds experiences of virtuality through computers or headsets, bearing in mind that the body is, after all, the primary medium from which we access any world to begin with. It is precisely this centrality of the body in experience, however, that yet again sparks fresh questions in regard to embodiment in virtual worlds.

Moving from text-based MUDs to screen-based graphical MMOs and now to gesture-responsive Virtual Reality complexifies the body politics and social modes of immersion. Social VR, however, brings into view media historicity and cultural relationships that shape the digital objects within it. Arguably, many virtual environments are increasing in fidelity over time, often mirroring the physics and values from the physical world. Virtual worldmaking, however, rejects extending concepts from the physical world into virtual space, including its dominant discourses. Rather, virtual worldmaking emphasizes difference and material relationality. Social VR is a breeding ground to test these ideas, with unique affordances that tease out not the newly embodied nature of place-making and its heightened subjectivities, but also the complex interrelations between digital objects in networks of globalization.

3.2 Close Reading 1: *VRChat* as Subjective Computing

System

Initializing World...

Relaxing, ambient music and the *VRChat* logo launched my body into virtual space. Within my headset, I was enclosed in a turquoise blue screen, titled “Initializing World...”, and a loading bar slowly inched from 31 to 34 percent. As the “world” was loading, a couple introductory messages popped up into my sight. They were in regard to safety precautions, being aware of my Trusted Users only, and community rules.



Figure 3.1: Screenshot by author of the loading screen that initializes a user into the VRChat game.

In foregrounding the importance of safety, the game designers established *VRChat* as a public space in which users may have conflicting experiences of personal boundaries. These loading messages served a dual message— first, affirming that users had control over their safety settings, and second, that personal boundaries are expected to be transgressed. At this stage, I had little idea of what any of my basic controls were at all, let alone why or how I would

customize them. Although I had heard about harassment in social VR before, its threat was not at the forefront of my concerns, and I excitedly awaited to enter the world.

Being visually enclosed in the loading zone felt stifling, like looking at a blank wall that simultaneously stretched endlessly beyond. I closed my eyes and instead focused on the meditative background music, my head nodding back and forth, ever so gently, from the weight of the headset. My thoughts slowed down, and I exhaled slowly. Patiently waiting, a stillness grew inside of me, and my mind drifted along with the music. After what felt like several minutes, I opened my eyes again, and checked the loading bar. 55 percent. With a big sigh, I ripped my headset off.

The abrupt silence starkly brought me back into the real world. In contrast to the blue display, the colors of my bedroom looked especially muted, and my messy floor looked more cramped than usual. I returned to the odd sense of loneliness that the pandemic had characterized my Friday nights. Outside the window, evening was settling into night; usually, this progression of time would lead to plans to meet up with friends and colleagues. Usually, I'd put on my coat and gloves and exchange laughs with my roommates on my way out, where my face would hit fresh, crisp air, my cheeks blushed with excitement for how the weekend will unfold. Instead, however, everyone was in their rooms and my mouth was dry from being silent all day, my temperament stoic from the solitude.

I put the headset back on, to a pleasant surprise. Finally! The loading was complete. With a jolt of excitement, I clicked “Join World,” and enter.



Figure 3.2: Screenshot by author of the generic virtual home to which users are introduced to the game.

As if my body was dissipating and passing a centrifuge, I was teleported into the virtual world and solidified into digital form. An electronic RGB paradigm replaced the dim, warm hue of my bedroom lights, and 3D blocks grounded my feet in lieu of the fine-grained texture of my carpet. Here, I was subject to new laws of physics, where my controllers acted as my hands. I was no longer in my bedroom but inside my computer.

Still, consistent as ever, the calm, ambient music from the loading zone enveloped my headset. A world, my virtual home, came into view. Finally, I'm here. After weeks of research, configuring my VR set-up, updating the Oculus software, downloading the game, and waiting patiently through various systems to load—I was here. The music was on loop, inviting a meditative undertone to explore this space of endless possibilities. *Come look, click here*, the house whispered. All I needed to do was step further inside.

My left-hand fit snugly and intuitively on the controller, my thumb pressed forward. A light blue, dotted line stretched out in front of me, pointing to a spot just a few feet away. Responding to my commands, a humanoid robot emerged from my position and walked forward

to the spot at the end of the dotted line. Suddenly, I was now there, my position had shifted. I turned my head and see that on my left was a bulletin board and to my right was a curious sign that says "Avatars." Pressing my left controller again, I tried to move towards it, but accidentally burrowed into the wall. Frustrated, I clicked several buttons but to no avail. Taking pause, with my right controller, I learned to toggle my viewpoint little by little to the right, until the "Avatars" sign was at the center of my view. Then, with the left controller I moved forward, this time in the correct direction. The humanoid robot once more followed the blue, dotted line to the designated spot. *So here I really am*, I thought. Pleased by successfully maneuvering to where I wanted it to be, I awaited what's next.

Finding my Virtual Body

By coupling the user's viewpoint with that of their avatar, the interface aims for a sense of “perceptual realism” by mirroring the spatial physics of everyday physical life. While being able to turn my head to look around my virtual home in the first-person point of view certainly contributed to a sense of presence in the virtual environment, I had little notion of presence in a particular body. Surely, I was not the same self with the same features as in the physical world, but because the first-person point of view obscured to myself what my avatar looked like. "I" was left ambiguous and disembodied. Stumbling with my controls and learning how to be within space, I was a nascent, fragmented entity absent of virtual identity. Thus, at this stage, while I was immersed in the medium of virtual reality, I was not yet truly being in the virtual world.



Figure 3.3: Screenshot by author depicting the default humanoid avatar looking at its reflection in the mirror.

Only when I saw the full humanoid robot body in front of the mirror did I recognize it as my own. Like an infant identifying their self-image as a unified whole with eyes, arms, and legs for the first time, the notion of a virtual identity was crystalized. Intrigued, I lifted my right and left arms and noticed the robot in my reflection follow. The visual representation of the mirror afforded the possibility to map the imagery of the avatar with my motions, gradually coupling the relationship.⁷ Like a puppet, my personhood was realized. Using the preset animations on the menu bar, I dance, clap, and "lay dead." Smiling, I wave at my own reflection. This is me.

In these nascent stages of *VRChat*, by finding my virtual body, the mere notion of a virtual identity became possible. Of course, the illusory joy of the mirror stage, however, is only the nucleus of gradually accrued meanings and social constructions. As I soon discovered,

⁷ According to game scholars, the simultaneity of visually represented activity and the actions of the game player's body is the key aspect to how users come to identify with their avatars (Black 2015). Rather than from the perceptual realism of the first-person viewpoint alone, the combination of bodily actions and visual representation of the avatar foregrounds the formation of virtual identity.

perhaps I did not want to be this generic humanoid robot. What avatar, then, should I become? Who am I and who do I want to be?

Opening up the menu bar, I click on the "Avatar" tab. With selections ranging from cartoon bears and anime characters to aliens and a stick of butter, I am overwhelmed by the lack of cohesive aesthetic in all the avatars. The interface looked more like a networked marketplace, laden with user-generated names, designs, and categories that did not yet make any sense to me.⁸ Without much prior context nor experience with other avatars and their significations, I'm led to make decisions based on personal aesthetic and representational preferences. While scrolling through, I felt that the humanoid avatars lacked a flair of individuality and that the cartoon characters seemed too trivial. Scrolling though, I eventually settled on an avatar named Shadow Woman. I was drawn to Shadow Woman because her mysterious eyes, bangled jewelry, and bohemian-style clothing reminded me of Princess Mononoke, an anime character in touch with spiritual energy of nature and evocative of Japanese folk mythologies. The contrast between the spiritual iconography and the technological VR realm was an aesthetic that fascinated me.

⁸ For instance, many of the worlds had Udon in the title. What I recognized as a delicious bowl of chewy noodle soup, I later realized, was the name of VRChat's latest interaction system included in its software development kit. In the Unity 3D modeling interface, the interaction tool looks like connective strands, or noodles.



Figure 3.4: Screenshot by author, looking at my reflection as Shadow Woman.

I looked at my reflection and prepared myself for entry into the social world.

Disorientation and Disarray

My first couple of explorations in public worlds unraveled more complications than I had initially anticipated. Unlike the experience of ethnographers of virtual worlds which I had read, the challenges I faced with social engagement, the barriers to agency in my virtual body, and the uncertainties of self-perception obliterated the possibility for any claims toward full participation and empirical observation of social behavior. These socially entangled complications, coupled with uncertainties of the interface altogether, produced a sense of alienation difficult to explain by the modalities of experience alone.

The immediacy of social presence in *VRChat* is not for the faint of heart. The first public room I visited was a warmly lit interior of a modern home with jazzy music and rain simulation.

Contrary to the ambiance proposed by this virtual environment, the collision of voices provoked a different response. Upon entering, I realized the tranquil loading zone that had introduced me to was no longer, nor was the promise of personal space. Instead, I was at once struck by multiple voices talking over one another. The image of cartoonish 3D avatars and their plastic faces crowded around me, their voices speaking in very real tones. The text of hardly comprehensible usernames ranging from "Daddy Acoustic Senpai" to "Boneless Spaghetti" overlapped on my screen, a postmodern mass, absent of sign or referent. The near-psychedelic simultaneity of intimacy and anonymity felt at once sinister and disorienting, striking in me a deep paranoia. *Who really are these people behind their disguises? What do they really want from this experience?* A burst of boyish laughter erupted to my left, followed by chatter increasing in intensity, soon yelling over the chorus of other voices. The stark realization of being so spatially intimate with others was paralyzing, and as I fumbled with my controller to leave, my panic was only exacerbated when my rigorous clicking refused to cooperate. My anxiety became so heightened that I had to take off my headset and manually shut down the program through my PC.

Discussion and Analysis

Finding 1: As a new media interface, social VR provokes sensorial-technical affect that influence how users relate to the objects within the world and requires an active learning of sociotechnical rule systems.

VRChat is renowned for its user-friendliness and culture of radical acceptance, and the perception that you can "be who you want to be" is widely espoused by its most earnest

proponents.⁹ The rhetoric of the Avatar Dream and its possibilities for infinite sociality is well established in the marketing of *VRChat*, in effort to increase its uptake as commercial product. Likewise, at the user interface, *VRChat*'s public messaging in the loading zone sets inclusive social norms and expectations, such as zero tolerance for hate speech or discrimination, and even calls for users to "Join the Community." The calm, meditative music for the loading zone and virtual home evoked a sense of control, like the technology was in service to you, much like how commercial products like smart homes or virtual assistants are designed. Learning the controls and finding my virtual body in the initial stage contributed to a greater sense of confidence and presence within the space. The user interface, loading experience, and the novelty of recognizing the perceived affordances of social VR through embodying an avatar only increased my sense of immersion.¹⁰ Moreover, the perceived affordances marketed of social VR, such as being able to chat with other users, created an expectation for social cohesion.

The possibility for social inclusion, however, comes with a price—virtual embodiment in *VRChat* requires an active learning of norms and rules that involve adjusting to the technology and platform as much as its social customs. In stark contrast to such expectations, my first time entering a public room was sensorially disorienting. In particular, the immediacy of voice-chat triggered uncertainty, alienation, and fear, rather than a sense of connection. My unfamiliarity with the aesthetic conventions coupled with the hypermediacy of the images heightened a sense

⁹ Facebook markets the promise to "defy distance, discover extraordinary experiences and be inspired by others," as does *VRChat* to "overcome social anxiety" and "express yourself."

¹⁰ Several users report a similar feeling of joy when looking at oneself for the first time in a mirror in *VRChat*. YouTube personality PHIA, says in our interview that "Inside of VR, I went over to a mirror and when I looked in the mirror, I saw myself and it was kind of crazy because it looked like me... In having that connection inside of the virtual world was just, it really moved me. And it made me feel so connected to what this place is, um, in, yeah. I wouldn't trade that experience for pretty much anything." Likewise, trans users also identified how looking at the mirror for the first time in the avatar body of their chosen gender momentarily resolved feelings of gender dysphoria (Brown, 2019).

of alienation that affectively overwhelmed my user agency, requiring the experience to be manually stopped. This conflation of voice-chat, spatial proximity to others, and full graphical enclosure produced what Guy Debord termed as a “spectacle,” in which the mass mediation of images replaced the possibility for "authentic" social relations (Debord, 1967). The totality of the image became more real than the specificities and interrelations of its parts.¹¹ Neither in "real" or "virtual" domains but rather a psycho-social relation with the user, the spectacle is predicated on a blended relationship of entangled signs. Caught in this web of signs that become the image itself, the interpreter is left to contextualize a situation based on their own worldviews which I later describe through phantasms.

The way socio-technical affect is produced by media-specific affordances, in my case voice-chat, is an expression of system agency in *VRChat* as a subjective computing system. This affect is particularly pronounced during early encounters, when an unfamiliarity with the controls and environment might heighten feelings of disorientation and is not limited to the instance I described. System agency can be produced for a variety of reasons ranging from technical, such as when the volume is abruptly loud in your ear, to social, such as feeling fear from social harassment, to more socio-technical, such as when your avatar is blocked from view due to its poor technical fidelity, thus restricting your self-expression.¹²

Because the inherent link between avatar and socio-technical system is initially masked, a greater sense of user agency requires learning the technical operations of the system. For

¹¹ Guy Debord describes in Marxist terms "the society of the spectacle," a condition of late modernity. As he writes, "In societies where modern conditions of production prevail, all of life presents itself as an immense accumulation of spectacles. Everything that was directly lived has moved away into representation." This condition is further expounded on by postmodern thinker Jean Baudrillard's "hyperreality," in which images and spectacles occlude our access to the real altogether.

¹²The avatar performance ranking system in *VRChat* requires a certain technical fidelity for avatar performance so as to standardize the shared network performance between all users sharing the space. This system exemplifies inherent links between the avatar and the socio-technical system.

instance, the highly customizable aspect of *VRChat* also risks masking the technical operations that shape how users interact with each other. For instance, users can change their audiovisual settings or individually block users in the room, thus not every user sees and hears the same thing. Users also access *VRChat* in different ways, ranging from PC and PC-tethered VR to the Oculus Quest, with users ranging from those who don't have microphones to those with full body VR rigs. In this way, understanding the technical and socio-technical rule systems offers more clarity on the nature of shared experience in social VR, as opposed to the spectacle of social VR. In this way, technical skillsets and experience with gaming technologies predispose users to a degree of user agency and require a learning process for others.

Finding 2: Despite positivistic promises of heightened social presence, social VR reproduces gendered exclusions in discriminatory ways.

While spatial embodiment, complete visual immersion, and voice communication can heighten social presence online, it also questions how such affordances are used and experienced. In particular, voice-chat reproduces gendered exclusions through signification processes that privilege a culture of “hetero-comfortability” (Brett, 2019), while gesture, spatial proximity, and heightened presence also risk triggering bodily trauma rather than fostering closeness.

Cyberspace has never been a safe environment for women. Hateful acts online are experienced in very real ways. Recalling that “cyber rape” has occurred as early as 1993 in a text-based MUD (Dibbell, 1993), it is for good reason that first encountering social VR is met with great trepidation. Early adopters of *VRChat* and similar social VR platforms have reported extensive accounts of social harassment targeting female-presenting avatars. In 2018, nearly 50

percent of women who regularly engaged with social VR space had experienced sexual harassment (Cortese, 2019), with reports of being slapped, humped, or sent sexually explicit messages. *VRChat*, made up of 81.5 percent male users, recreates a lot of these issues.

For example, voice-chat produces gender cues (of being a woman or trans) that increase one's likelihood for targeted harassment. Having a higher pitched voice is gendered as female in a way that may invite unwanted solicitation due to a process that media theorist Noel Brett describes as "hetero-comfortability," or "a process of recognition in which feelings of familiarity ... create impressions that allow one to find comfort in the continuing appearance of hetero-signifiers." Brett describes an experience in which their feminine avatar is met with harassment after they started speaking. Brett continues:

"Being a queer resident, my presence in a feminine virtual body is able to break the learned repetitions of heteronormative expectations for feminine bodies given my 'dissonant voice.' Responses to maintain heteronormative space are triggered by other residents. In my case, this was met with harassment, using terminology (trap) that is often wielded to incite violence towards trans women" (Brett 2017).

Cultures of hetero-comfortability operate at the signifying level, shaping affective relations to technology. Gender-based harassment in social VR, for instance, can trigger PTSD caused by real world sexual assault, an unintended and distressing consequence that some women face in their explorations of a new technology (Cortese, 2019). In response to these findings, Cortese and Zeller have reoriented design principles for social VR to privilege "the act of demarcating and protecting embodied personal space," which is essential to designing ethical social VR systems. In recent years, social VR platforms such as *VRChat* have implemented increasing

amounts of precautionary measures, which effectively grant users more body sovereignty at a systems level. Gender disparities and hetero-masculine cultures persist in the space, however.

3.3 Close Reading 2: Cultural Phantasms and Socio-Technical Exclusions

Aesthetic Ambiguities

Despite setting up my safety settings, my next few encounters did not alleviate my discomfort, but rather brought about new questions about social and cultural systems. In my explorations, I often found myself paralyzed between the desire to participate and suspicion of what it signified. Self-reflexive notions of how my avatar was socially perceived greatly impacted my sense of comfort and identification with it.

As Shadow Woman, I entered one of the most well-known and popular public worlds called VOID Club. Pink and blue neon lights lined the futuristic cityscape, and electronic music pumped in the background. In true cyberpunk fashion, Japanese characters lined the walls and storefronts, and the figures of female anime characters with exaggerated bodily proportions populated the scene. Within the first few minutes of entering VOID Club, a group of three users, donned in anime avatars, approached me. One of them immediately sends me a friend request, while another runs around me rapidly in circles. Confused, I wondered if this is a normal social interaction, or a form of play and I approved the friend request. First, the three avatars, all male-voiced, speculated my gender then, to my surprise, one of them looked directly at me and taunted, "You're so black. Why are you so black? Are you really Black?" as his friends laughed, then ran off into VOID Club. Confused, I decide to log off for the day. Later on, I decided to change my Shadow Woman avatar (I became Piglet instead).



Figure 3.5: Screenshot by author, Selecting Piglet from Winnie the Pooh in Big AI's Avatar Corridors

Next, I enter the world entitled “Japanese Shrine” from a portal in my virtual home, with an iconic *torii* red gate signifying the entrance of the Shinto shrine and blossoming cherry blossoms. *Of course, of all things*, I thought.



Figure 3.6: (Left) Image of torii Japanese gate by [semplice.ma.grazioso](#) accessed on Flickr, (Center) Image of Japanese Shrine VRChat world created by [RootGentle](#), (Right) Icon of State Shinto accessed on Wikipedia.

The prevalence of Japanese iconography and imagery thus far provoked an immediate sense of skepticism.¹³ As it turns out, Japanese Shrine world was actually quite beautiful, and the gazebo-like structures sparked treasured memories of my time walking around the royal gardens of Gyeongbokgung Palace in Seoul, Korea. The red gates also resembled an iconic scene in the film *Spirited Away*, a top grossing animated film in global markets, that depicts a striking procession of spirits arriving into the world through the gates. Nevertheless, wasn't it Miyazaki who also influence my choice for Shadow Woman earlier to begin with? Perhaps my initial cynicism was unfounded.

Surfing through the "Public Avatar Worlds" on the menu page, I see various user-generated Avatar Worlds. A sizable proportion of the worlds I scrolled through displayed anime-style aesthetics, and even the few I clicked into with no anime-related signifiers were consistent to this trend.

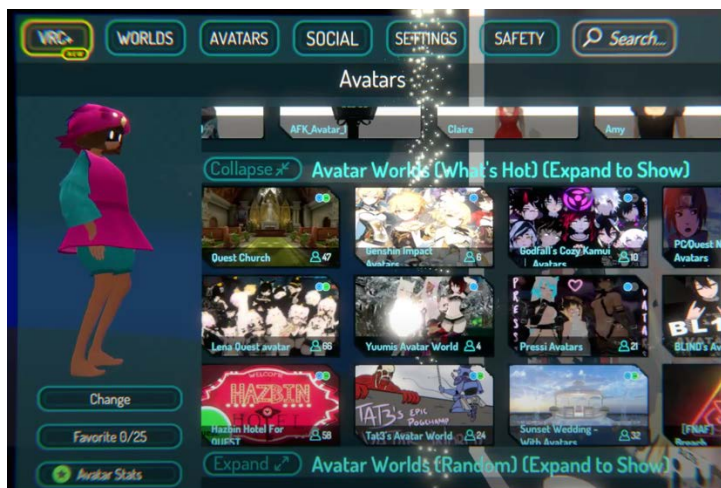


Figure 3.7: Screenshot by author scrolling through Public Worlds via the VRChat Menu.

¹³ My negative feeling about the space was in response to trends of dissatisfactory media representations of Asia, such as clichéd imagery of Japan or offensive Orientalist tropes. While the red gates of Shinto and its roots in Japanese soil may evoke a sense of awe, just as deep are its ties to fascist ideology. At the start of the Meiji era, the Japanese empire appropriated folk mythology for State Shinto for imperial projects in Korea, China, Philippines. Abstracting beauty from social context is a dangerous form of immersion.

Selecting an Avatar World entitled "Sky Avatars," I expected to see some type of celestial figures, but instead was met with several rows of avatar bodies in sexualized clothing and exaggerated body proportions. The imagery of female bodies lined up on a pedestal provoked a context of sex work and the explicit commodification of women's bodies. With the click of a button, users are able to become a cyberpunk-chic anime girl.

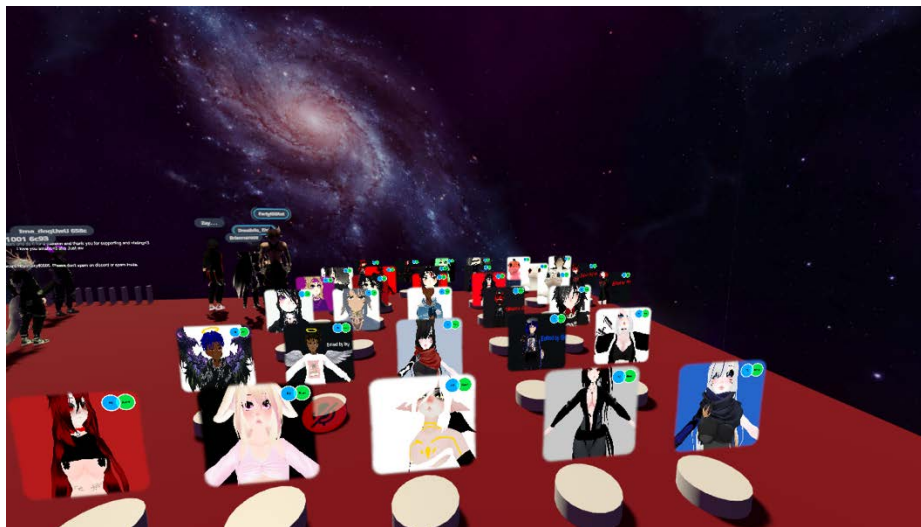


Figure 3.8: Sky Avatar World in VRChat

Many of such avatars are used in places like Club VOID and the electronic dance music community (EDM) more broadly. The general aesthetic is made of anime-style characters with cat ears and tails, or a similar variation, with themes ranging from gothic to fantasy. Most frequently the anime girls had pale, white skin and feminized body features. The graphical emphasis on female body features was pervasive in the public worlds. The pervasive imagery of oversexualized women, such as those displayed on pedestals in Avatar Worlds, provoked a notion of ownership and domination over avatars and virtual identities.

Meeting Hatsune Miku

One evening, a peculiar email found its way into my inbox. It was from a publicist I met at Sundance Film Festival last January.

Alone Together: the first live concert in VR!

Live from his studio, French musician Jean-Michel Jarre, via his Avatar, will perform live in a virtual stage and universe hosted on the platform and simultaneously broadcast and accessible to everyone online via PC in video game mode or in total immersion using any tethered VR headset.

I was intrigued. Would I run into some of the same producers and artists I met at Sundance?

Would it be possible to meet someone new in a meaningful way?

An hour before the event, I excitedly prepared my headset. After logging into *VRChat*, I entered the lobby where around forty other participants were excitedly waiting, chatting amongst themselves much like one would await the doors opening at any other performance venue.

It was 4pm—showtime—but the virtual gates remained closed.

I paused, unsure what to do. There was no ticket booth, no phone number to call. "Do you know what's going on?" I asked the samurai avatar to my right. He didn't respond. Confused, like the others, I tried respawning, refreshed the world, and restarted the game altogether.

4:10 soon became 4:30. My computer was processing louder, heating up my bedroom. Beads of sweat started to line my brow. Frantically, with my headset half on and half off, I scrolled Twitter on my phone and pieced together that the event was facing technical difficulties. Soon after, the doors finally opened, and the crowd of around thirty avatars flooded the venue. No music was playing nor was Jean Michel Jarre present. Next to me, a high-pitched noise started emitting from someone's microphone.

"*Hey can you turn that off there! How do I mute him?*" someone yelled, "*Hey, hey. Hey!!! Can you tell him to stop that?*" I held my headphones away from my ear. Then, an anime girl avatar scurried from the side of the room to the front stage and started dancing.

Dressed in a schoolgirl outfit, two large pigtails, and a short skirt that barely covered her long, pale white legs, she reached down suggestively, as she waved her hips. While it seemed like everything else at that concert wasn't working, the anime girl's dance was fluid and expressive. As if filling a room of silence, she danced to a couple bemused voices in the crowd.

This avatar was none other than Hatsune Miku, an anime figure and virtual pop star from Japan. Programmed to dance in her own music videos and concerts, seeing a Hatsune Miku performance in *VRChat* was also seeing remnants of Japanese media culture. While the music concert was in France and already a global event, in that moment, Hatsune Miku signified to me a stark internationalization of virtual space.

I approached the Hatsune Miku avatar afterwards and asked why they did what they did. In response, the user said, "I just clicked the emote button. I didn't make this," disclaiming himself from the act. The emote button is so impersonal and detached, yet it produced such strong effect. I wondered more about the identity of Hatsune Miku and how she found her way in *VRChat*.

Discussion and Analysis

Finding 3 – Techno-orientalist representational norms of VRChat provoke phantasms that may operate as box effects for forming virtual identity.

In addition to affect and affordances, representational norms in social VR reproduce social exclusions by causing box effects in forming virtual identity, in contrast to the Avatar Dream. French theorist Louis Althusser theorized that ideology is a "system of representations" governed by particular rules that establish politics and power relations (Lewis 2009). Althusser argues that subjects are defined as such by their inescapable existence within social structures. Identity is preceded by social relations. In a process he terms as "interpolation," ideologies "hail"

individuals and offer a particular identity, and in the act of recognizing this identity as true, a "subject" is created. This concept has been applied by feminist and postcolonial scholars to describe identity relationships produced by ideologies of power such as patriarchy, racism, and coloniality. Subjecthood within virtual world systems is no different. Despite the semblance of choice in selecting an avatar, social and cultural relations that govern virtual worlds precede a user's construction of virtual identity. Moreover, the user brings with them systems of knowledge that in turn affect how they recognize and make sense of their identities within the virtual world. D. Fox Harrell has written extensively on how racial and gendered codes are both embedded into computational systems and emerge as cognitive constraints within the user (Harrell and Lim, 2017: 61). As Harrell writes, "computational media play roles in constructing ideas that we unconsciously accept as true and constitutive of reality yet are in fact imaginatively grounded constructions based in particular worldviews" (Harrell, 2013: 29).

This is all to say that being "hailed" by two masculine-sounding voices in anime bodies within a virtual world designed with Japanese and cyberpunk iconography heightened my awareness of my Asian-American identity although my avatar is not Asian. My physical life identity leads to my frustration with the techno-orientalist iconographies, removing the possibility for an untethered, virtual existence. In this way, the design of virtual worlds and avatars are likewise tethered to values in the physical world, working together to produce either box effects or empowering effects on one's virtual identity.

Being in spaces fixated on Japanese iconography and anime aesthetics, yet populated by English-speakers, sparked questions about what Japan signified in the cultural imagination of users. Moreover, given that the cyberpunk genre predominates the contemporary cultural imagination about virtual reality, rediscovering certain techno-orientalist tropes, such as hyper-

sexualizing women and exotifying anime in an embodied form was disorienting, and made me feel hesitant to engage in fantasy worlds that recreate cultural biases that continue to significantly impact social life.

Initial encounters in VR bring in past experiences in one's symbolic world. For example, in a different sports-oriented social VR game called Rec Room, the first space users enter to familiarize themselves with their avatar bodies is the locker room. Jennifer Outlaw describes how as a woman, the imagery of the locker rooms immediately provoked a phantasm of toxic masculinity (Outlaw, 2018). Similarly, my first encounters of *VRChat* exploring Public Worlds produced a sense of shock at the treatment of bodies, particularly that of anime girls' bodies.

3.4 Key Insight

Key Insight: Social VR heightens social presence and fosters a culture of performativity, particularly that of distributed online identities (as articulated, "hypermediated selves")

Harkening to McLuhan's notion of a "global theatre" (McLuhan, 1970) and a "tele-performative space" (Tinnell, 2011) in which telecommunications networks make every place a potential site of performance, *VRChat* similarly embeds avatars in a perpetual virtual stage. As with mask dances and carnivalesque masquerade, the theatricality of performance is heightened with an avatarized identity; masks, after all, are "characteristic of the most ancient rituals and spectacles" (Bakhtin, 1965, p. 39). What cultural values are being heightened by such performativity, however, range from militarism to racism.

As argued, social VR reflects new media logics that blue the perceptual interface. Particularly in *VRChat*, in which digital artifacts are borrowed, remixed, and imagined in relation to pre-existing media cultures and global trends, the meaning of signs and symbols are displaced

from their original contexts. As an assemblage with these mixed signals and signs, avatars perform a distributed, virtual identity in an embodied form. Coupled with the logic of immediacy, these two simultaneous phenomena are a combination of embodied affect and a remediated avatar body.

In *VRChat*, certain types of avatars have come largely from online icons from its related media and game culture. Avid gamers who learned of *VRChat* through memes on Reddit might carry a different system of values and practices than those drawn to meet up with friends in the Furry Fandom. The most viewed YouTube video about *VRChat*, totaling at nearly 30 million views, is entitled “DO YOU KNOW THE WAY” and documents the Ugandan Knuckles phenomenon of early 2018, which followed the first surge of usage in November 2017 and throughout the following year.

Ugandan Knuckles is a remixed version of a character from the Sonic franchise that has evolved through multiple video game ecosystems through collective practices that sustained its virality and the racism behind it. Inspired by a meme, a YouTuber designed a Ugandan Knuckles avatar for *VRChat* which was then quickly circulated and populated in the game itself, paired with performance practices characterized by racial stereotypes, such as the use of mock accents. The user would then start making spitting sounds and crowd around the closest anime girl as their “queen.” Unsuspecting users who fall victim to Knuckles are then subject to mass trolling, often by large groups donning the same avatar. When asked about this phenomenon in an interview, Srymor states:

“Meme avatars [are] basically ... embodiments of different internet culture icons. There's a lot of moments where there's an avatar of something only because it kind of had a spotlight on the internet for a while. I didn't feel like it was *Ugandan* Knuckles (emphasis added). It felt like I was an anthropologist inside of virtual reality witnessing what was happening through no judgment of what they were doing, but just this isn't a representation of what virtual reality is at this time in place right now. I feel like that

video is a pretty good representation of that. That's what virtual reality looked like at that time.”¹⁴

This meme prevails in the social memory of many of the English-speaking users who joined *VRChat* in 2018 through internet memes and gaming culture. Moreover, it demonstrates the interconnectedness of various media ecologies and the participatory, remix culture involved - from video games to Ugandan films to internet forums, memes, and 3D models in *VRChat*.

“I don't think 2018 VR will happen again,” says Srymor, the creator of the aforementioned video. “It's weird how normal VR became and once it started feeling more normal, people just started treating it more seriously. What I feel most VR users do now is form pretty strong bonds with the virtual space and like with their avatar.” What Srymor articulates is that the process of learning the language of a new medium and sparking community participation came at the price of reducing racial Others into offensive caricatures. The racist masquerade of 2018 *VRChat* demonstrates how the “meme avatar” and its cloak of communal anonymity served as a technology for elaborate performances of racism, pointing to the harrowing forms that virtual embodiment could take.

In addition to the avatarization of hypermediated selves, social VR remediates cultural bias. Lisa Nakamura extends this argument to articulate how techno-orientalism manifests in cyberspace through the metaphor of touristic cultural imperialism. According to Nakamura, the Internet enables “identity tourism,” acts of racial performance and “Orientalized theatre.” To Lisa Nakamura “cyberspace is not only a place where travel and mobility are featured attractions, but also figures cyberspace as a form of travel, which is inherently recreational, exotic, and exciting, like surfing” (Kolko et al., 2000). According to Nakamura, tourism is a

¹⁴ Interview with Srymor (January 2021).

particularly apt metaphor to describe the activity of racial identity appropriation, or “passing” in cyberspace.

Through dual new media logics, social VR affords sensorial and social immersion. Chapter 3 has laid the groundwork for understanding the boundary between the body and social VR at the level of perceptual interface. Centering bodily affect and media affordances, I have articulated the formation of subjective experience in social VR through auto-ethnographically inspired writing and critical analysis. This methodological approach also highlights the limitations of my experiential knowledge, bounded by the phantasms provoked within a particular worldview and masked by the spectacle of new media interfaces. To understand the operative power of *VRChat* as a techno-orientalist computing system requires a structural analysis of one of its defining components— the anime girl avatar.

IV. Analyzing the “Anime Girl” Avatar

4.1 Anime Girls in *VRChat*

The cause for the proliferation of anime girl avatars in *VRChat* is not any one definitive thing, but rather a set of interrelated socio-technical components. As video essayist, “VRChat anthropologist,” and avid *VRChat* raver Straszfilms argues that the key factors for the popular uptake of anime girls is “them looking good, being relatively available, and technologically ‘easy’ to import into the game,” (Straszfilms 2021) highlighting technological convenience and availability as the values from which virtual bodies are designed.

Sure enough, due to advanced avatar rigging software in Japan, online 3D avatar repositories skew toward anime girls and many digital artifacts for sale come from Japanese creators and commercial enterprises. Other similar, perhaps more dubious, reasons include: “there are no well-designed male avatars,” or “it’s easier to dance as a female [avatar] and the flow of it is smoother too.”¹⁵ Notably, a tendency to essentialize anime girls as *naturally* nice-to-look-at is pervasive. Other reasons have ranged from “I like to look at myself in the mirror and see a sexy woman,” “I like to wear this tiny avatar because I’m a very large man in real life,” and “It’s something pretty people want to look at pretty things – don’t you want to feel attractive?” “It’s a fantasy you can own.”¹⁶

In a group discussion at a VR show entitled *Endgame*, a group of hosts including a behavioral psychologist gathered a group of participants in 2017 to discuss the topic of “The

¹⁵ In continuation of the quote of Virgo4u, “They say it moves great, and they love the way the avatar looks. It’s like WoW [World of Warcraft] and RP [role-playing] games, some of the guys don’t want to see themselves as that character. They want to be like oh my god, that’s my dream girl. I want to be her.”

¹⁶ These quotes are from a 2019 performance by Michelle Cortese spent 3 days of 4-hour sessions in a store-front performance of gender identity. During this period, she confronted and interrogated players on their choice of female avatars.

comedy itself.” In *VRChat*, people are encouraged to “do weird things just to get a reaction, because it’s fun and “changes things up.” Such culture of irony was the case with the proliferation of anime girl avatars in which, following the technical reasons, “eventually it started to become something of a joke— like, 'Haha! Everyone on *VRChat* is an anime girl!' This, over time, just fundamentally became part of the culture of the game” (Strazfilms, 2021). The confluence of meme culture with avatar customization in *VRChat* resulted in the appropriation of MMD and anime aesthetic for performative ends. Eventually, the aesthetic stick with the cultural norms of *VRChat*.

The electronic music and dance community in *VRChat* represents a highly concentrated use of anime style avatars in its various social scenes, often characterized by cat ears, tails, and wolf-like features. Many avatars are designed for sex appeal, for both the individuals’ and others’ visual pleasure. As described by the owner of Club Zodiac, Virgo4u, “You have the wolf boys and wolf girls and the nekos [cat girls]. It’s cute, also makes the avatars look hot as hell.”¹⁷

The anime-style features of the avatars, “their hair and big eyes,” are both “realistic but not realistic,” and users never lose sight of the “cartoonish aspect of it.” Instead, the magnetic pull toward anime avatars come from the excitement of becoming a fantasy (“oh my god, look at that chiseled chest,” “oh my god I want that hair,” “I want to be that.”). This half human and animal aesthetic is entangled with popular anime character designs from Japan. As Virgo4u describes in regard to her character design, “There’s nothing like a humanoid person being half furry, such as Inyuyasha,” she says, “Inyuyasha is a cute, handsome silver fox.” Another aesthetic convention found in anime character, however, is its pale skin and thin proportions. For those with a degree of technical proficiency with 3D models, the avatars can be customized in

¹⁷ 34:00 interview with Virgo4u

ways to better express themselves. As Virgo4u explains, people create “a different tone of skin [that is] darker,” as well as those who “take MMD models and make them thicker.” In addition to imbuing more physical world characteristics into the identity of one’s avatar, however, modifications to the avatar’s body also reflect remixing forms of attractiveness and sexual fantasy in ways that continue to reinforce gender stratifications.



Figure 4.2: Group photo of Club Zodiac by Club Zodiac accessed through Twitter. Virgo4U, founder and owner, is pictured in the silver hair on the front left.

“When it comes down to the non-dancing people wanting to be female avatars, we don’t know if they’re trans or if they’re going from a male to female, so there’s also that play in perspective. There’re numerous things that could be the scenario,” says Virgo4u, the owner of Club Zodiac.¹⁸

One of the most notable use cases of the anime girl avatar is in actively challenging gender norms by trans femme individuals and finding outlets for sincere gender expression and play. As one user articulates, “It’s so therapeutic to look in the mirror and see a girl, even if it’s

¹⁸ Interview from Virgo4u.

virtual” (Brown 2019). The use of female avatars by trans individuals reflects possibilities for user agency that result in empowering impacts for self-identification.

“I knew I was transgender before joining VRC,” says one user named Melody in an ENDGAME talk show, “but I had no way of experiencing it” (Endgame 2017). Not only did social VR remove a level of fear in expressing transgender identity, but also enabled interacting and embodying it. “The online presence I have prior to VRC that allowed me to be a girl, didn’t let me actually explore it,” says Melody.

In regard to the use of anime girls specifically, online trans communities often depict memes using anime characters, typically for representing a fantasy ideal for femininity or for depicting anime tropes dealing with androgynous or ambiguously gendered characters. This harkens to robust fan comic subcultures in Japan in which creative reappropriations by amateur artists, predominantly female, who would form genres such as BL (Boys Love manga) centered on homosexual relations and gender fluid characters. In this way, certain anime characters or tropes become iconic memes or pop cultural references within online communities.



Figure 4.3: (Left) Image posted on Reddit by ImShuffle as a “representation of trans culture” (Right) Image posted on Reddit by secretransaccount1.

Today, various Japanese ready-to-make avatar software, such as Vroid Studio, tailor to global audiences with no technical experience and maintain the anime style for virtual personhood. According to V-Tuber (Virtual YouTuber) and *VRChat* media personality, Phia, Vroid is “pretty much is laid out for you completely, which makes it really approachable for anybody looking to create an avatar.” In this way, in 2021, the conveniences of customizing and using an anime girl avatar has only increased with additional software to make the process easier. What this overview of anime girl avatars in *VRChat* reveals is that not only are they convenient to access, but also fit into existing cultural norms rather than disrupt them. In this next section, I look at the history and cultural specificities of the avatar as a digital object itself.

4.2 Avataring Desire: From *Bishōjo* to the “Anime Girl”

Avatar bodies have a historical-cultural origin. Rather, in addition to its life in social VR, avatar bodies are also ontologically intertwined with the virtual space of culture and online infrastructures situated in media-specific histories. In other words, they are actively produced by a constellation of socio-technical factors. Thus, to answer how the anime girl avatar became an icon for virtual personhood, I chart the “avatarization” of desire through the *bishōjo* figure its role in in Japanese consumer capitalism and the global export of ideals for Asian femininity.

Avatarization describes the material processes involved in constructing a digital avatar as an embodied agent in multi-user environments. The proliferation of anime girls is not simply caused by the preferences and choices of individual users alone, but rather, is caused by broader systems of cultural production. The cultural origins of the avatarized anime girl in *VRChat* can offer fresh insights on the gendered politics involved with *shōjo* (translated from Japanese to

English as “young girl”¹⁹) as well as transnational media histories. *Shōjo manga*, popularized in the early 1970s by a notable rise in female artists, the “rise of cuteness,” and “character fetishization (Allison 2006, p.136) is a genre marked by its “form of address” (Lamarre 2006, p.47) – it is made for and consumed by teenage or young girls.

Since the early 1900s, during the heart of Japan’s colonial empire, *shōjo* has been associated with the role of young girls in the formation of modern, middle-class consumer subjectivity. Adolescent girls “became” *shōjo* by attending all-girls’ schools and reading girls’ magazines, first forming the “private space of girls’ culture” (Shamoon 2012, pg. 2). Over time, *shōjo* (as both objects and subject) became major consumers and voices for marketing strategies (Allison 2006, p. 136). Two discourses about *shōjo* imagery, however, have emerged: *shōjo* as either “idealized girls as a role model with the emphasis of purity, innocence, but having agency mainly consumed by girls,” and “hyper-sexualized girls mainly consumed by adult men” (Sugawa-Shimada 2019, p. 182), as in anime genres such as *shonen* (for young men) and *echi*. (sexual play).

This mutation of *shōjo* from interior spaces of girls’ culture to objects of capitalist and male desire can be seen through the trope of the *bishōjo*, or the “beautiful girl” schoolgirl character design. In her analysis of the *Sailor Moon*, an anime with global export, cultural anthropologist Anne Allison articulates the “complex and contradictory” entanglements of the *shōjo* schoolgirl and narratives of desire:

“One is to identify with the adolescent girl/hero, an identification (and fantasy) engaged in by girls and also apparently males (boys and men) in a recent *shōjo* fad where “young schoolgirl” carries the connotation of carefree consumer and dreamer... The other desire is lust for the Sailor Scouts as sex objects, a desire expressed by male and female fans alike (Allison, 2006, p. 134).

¹⁹ Generally, *shōjo* has come to refer to images of “virgin innocence, purity, and vulnerability” in manga and anime (Sugawa-Shimada 2019, p. 200).

These dual desires reflect a relationship between consumers and media. While the schoolgirl laid the groundwork for the “girlscape” of consumer capitalism that links “feminine bodies, affects, objects, and environments” with urban processes of “mediatization”²⁰ (Yoda, 2017, p.176), the bishōjo figure, as “overtly feminized” shōjo known by their short skirts, thin physique, and rounded breasts, reflects a particular type of affective relation growing in the 1980s. This is largely due to the rising influence of *otaku* “geek culture” in determining cultural flow (Ito 2012).

Otakus are media-savvy youth born into a mediatized Japan. They are passionate fans of anime, manga, and video games and are characterized by their robust participatory engagement with popular culture and technology during the Internet age. In many ways, male otakus have driven the culture of avatarizing shōjo through their obsessive fan practices that construct fantasy worlds and digital lives for characters through media. These participatory practices are tied with the emergence of *kyara* as iconic characters designed for brand marketing in Japan. *Kyara* are part of a Japanese “media mix franchising model” which encourages remix culture and fan participation. Described as “characters without stories” (Wilde, 2019) or “body without organ” (Annett, 2015, p.159), *kyara* are fluid figures that take multi-medial forms in online and physical domains. Consumers enact and perform *kyara* in their lives, and they repurpose *kyara* content through music videos, fan art, etc. and participate in these franchise worlds. As digital media scholar Sandra Annett articulates:

“As evolving image-constructs that thrive on fan adoption, *kyara* cross the planes between psychologically rounded subjects and flattened symbols, between official and

²⁰ Notably, the shōjo genre as “the girlscape” is an extension of the mediatization of consumer culture in postwar Japan into the 1980s, in which marketing and advertising techniques foregrounded “informational and semiotic values of objects” more than the objects themselves (Yoda, 2017, p. 175). This is a parallel process to globalization, in which the material production of Japanese media is tied with global fantasies (Allison, 2015).

unofficial realms of product circulation, between licensed merchandise and free-for-all repurposing on the Internet” (Annett, 2015).

Kyara holds power in shaping popular culture, evoking tension between fan practices (“does their creative act free them to express their own desires, overcoming all social boundaries?”) and capitalistic structures (“[do] their affective labor turn the wheels of culture industry?”). What’s sure is that the kyara itself churns the wheels of consumer’s creativity and produces virtual worlds. As kyara, along with cute animals, inanimate objects, and corporate mascots, bishōjo are “soft” characters who are beautiful, approachable, and personable, qualities essential to her very design. None other than Hatsune Miku is representative of all these forces.



Figure 4.4: Hatsune Miku, Image from Vocaloid Fandom Wiki.

Hatsune Miku is a Japanese pop icon, anime character, a bundle of code, and a virtual hologram that sells out stadiums for her concerts. Hatsune Miku, translated from Japanese as “voice of the future,” is essentially a voice synthesizing software developed by the company Vocaloid and has evolved into an icon with an immense following. Because Miku’s voice and image holds no copyright, she is a fascinating experiment in crowdsourced pop art about whom fans create music videos and program dance moves that make up her performances (Sexton and

Milstein, 2017). As Mari Matsutoya puts it however, a “massive advertising campaign,” by Crypton Media (Jones and Matsutoya, 2017).

As a bishōjo figure, Hatsune Miku reflects the schoolgirl trope for anime girls and despite her womanly figure, she is only (and perpetually) 16 years old. Despite her feminine appearance, however, Miku is often defined not as a girl but as a “socially networked phenomenon” produced through “endless circulations of different modes of participation and communication” by her “ever increasing fan base” (Jørgensen et. al, 2017). Hatsune Miku was not always a mass replicable 3D model in *VRChat*; she first was a vocal software. She then became a two-dimensional anime character, a plastic figurine, a hologram, and perhaps a companion wrapped in thousands of men's arms in the form of a body pillow. In this way, her image and the media objects affiliated with her use are imbued with affective entanglements.

This form of bodily affect toward Miku, which bring forth obsessive and dedicated expressions of love, is described by through *moe*. Through *moe*, or the “euphoric response to and intimacy with fantasy characters and representations of them” (Galbraith, 2009), otaku hold “carnal attachments” and engage with images in ways “outside the biologically determined logic of sexuality” (Sone, 2014). These affective entanglements with virtual technologies are reflected in the design of bishōjo video games. Bishōjo games are dating simulation games with interactive narratives, in which the user interacts with a variety of female characters from the first-person point of view. As articulated in Emily Taylor’s critique of bishōjo dating simulation games:

“The protagonist seeks to remove each woman’s supposed power and reveal her ‘true form,’ which is one of weakness and the desire to be subordinate to men...Dating-sim games appear to be presenting an *akogare* (longing) of men, in which relationships are simple because women have no needs or expectations and may even enjoy the imperfections in their male partners” (Taylor, 2007: 201-202).

While certain media scholars theorize shōjo as an “imaginary girl” (Galbraith, 2011) or “new god” that open up “transcendent” relations to technologies (Lamarre, 2009), such as the ones in bishōjo games, these conceptions are based on singular forms of affect predicated on male desire. Moe affections certainly reflect new forms of affect toward mediatized figures, but this notion of this virtual personhood is built of the exclusion of women, quite literally built into the very conception of shōjo as nonhuman. These issues of representation, however, must be balanced with an analysis the affordances of digital media that allow such a social uptake to take place. To understand the avatarization of the bishōjo figure, we must consider not only a matter of her ability to be desired, but also one of her “stickiness” to particular online practices for controlling, circulating, and imagining bodies.

With over 100,000 songs, user-generated music videos, and concerts all around the world, Hatsune Miku inspires participatory fan culture, particularly in enabling fans to control and remix her voice and body. Using the Vocaloid or MikuMikuDance (MMD) software, fans can make music and choreograph Miku to dance along to it. MikuMikuDance (MMD) is a freeware animation program that lets users animate and create 3D models and animations. MMD software enables users to maneuver, pose, and choreograph 3D models—such as Miku herself—using digital puppetry and applying motion data. The cultural production of the anime girl avatar brings together MikuMikuDance (MMD), a Japanese software for rigging shōjo avatars, and *VRChat*, a US-based VR platform for embodying avatars, converging different worldviews into the body of the avatar in near cyborgian fashion. At once ambiguous in origin yet explicit in form, the anime girl is pervasive.

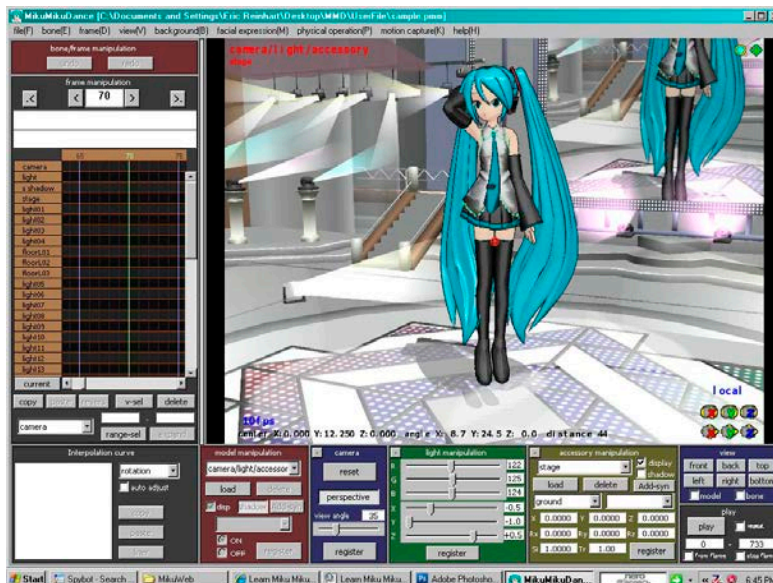


Figure 4.5: Screenshot by author of MikuMikuDance (MMD) software.

In the US, the relationship between filmic pornography, video games, and the universe from comic books are deeply intertwined (Saunders, 2019). User-generated computer-generated (UCGP) pornography is characterized by using video games and digital media in grassroots production processes to make videos for pornographic websites. Not unlike *VRChat*, anime characters, childhood cartoon characters, and pop cultural icons are often depicted in UCGP, remixed and reinterpreted in various pornographic contexts, which demonstrates the “global digital culture [...] of remix” (Jenkins and Deuze, 2008:7). While Saunders argues UCGP as a subversive practice challenging the “transparent veracity” of film and media and “power against mainstream porn,” UCGP often reinscribe heteronormativity in its representational norms. Nonetheless, Saunders interestingly argues that affective investments are distributed in the formation of the object of desire rather than on the object itself:

“the libidinal focus of this type of digital pornography fundamentally shifts away from the human body and the attempt to gain vicarious imagistic access to it through digital technologies. Instead, the labor of the animator, and the coding and characters they borrow from video game designs, become the libidinal focus of computer-generated pornography” (Saunders 2019:256).

The labor processes of creating the image becomes a key site of producing desire. Seen in another way, the engines that drive cultural production are a social relationship to technology; in the case of bishōjo girls and user-generated computer-generated pornography, they are often of heteronormative visions.

This brings us to the present conjecture with anime girls in *VRChat*. In an interview in the podcast *Voices of VR*, *VRChat* user and now developer claims being “the first person to lay out the methodology for importing MMD avatars,” which is defined as a format for a physics system for humanoids. According to Lhun, the MMD software pioneered an inverse kinematic physics system with sophisticated tracking that could make joints, knees, skin, and hair move properly. Originally a promotional tool for Yamaha's voice synthesis program, many original creators of MMD models now contribute to *VRChat*, *VKet*, and the *VTube* scene, and are starting a copyright and market culture in which people pay for models. Like Saunders argues, “the libidinal focus” shifts from consuming the body into the labor processes to create it. Anime girls not only reflect the convergence of participatory online cultures with social VR technologies, but perhaps also the perpetual cultural production of desire in the fantasy of globalization.

4.3 Analysis of the MMD-VRC Avatar

The convergence of MMD and *VRChat* reflect both continuities and divergences in cultural practices. These bodies are engaged in a sociodata ecology, which is defined as the way “technical infrastructure, data structures and algorithms, and code are looked at as they relate to issues such as embodied experiences, subjectivity” (Harrell, 2010, p.74). Analyzing sociodata ecologies also enables transnational comparative analyses. By focusing on the interrelations between media ecosystems, we are better able to represent the context of globalization and infrastructures of knowledge in the construction of virtual worlds.

VRChat has a feature parity with MikuMikuDance (MMD), and an abundance of plug-ins that help with importing MMD models from Blender and Unity into *VRChat* can incline users to follow this path. MMD models do not require deep technical experience with Blender or shading work, are easy to import into *VRChat* in high quality, and are equipped with dynamic skeleton structures. With step-by-step video tutorials and documentation resources available online, beginners can learn how to make MMD models and customize parts to their liking. In this way, the robust MMD media infrastructure works in tandem with its aesthetic appeal to produce these phenomena.

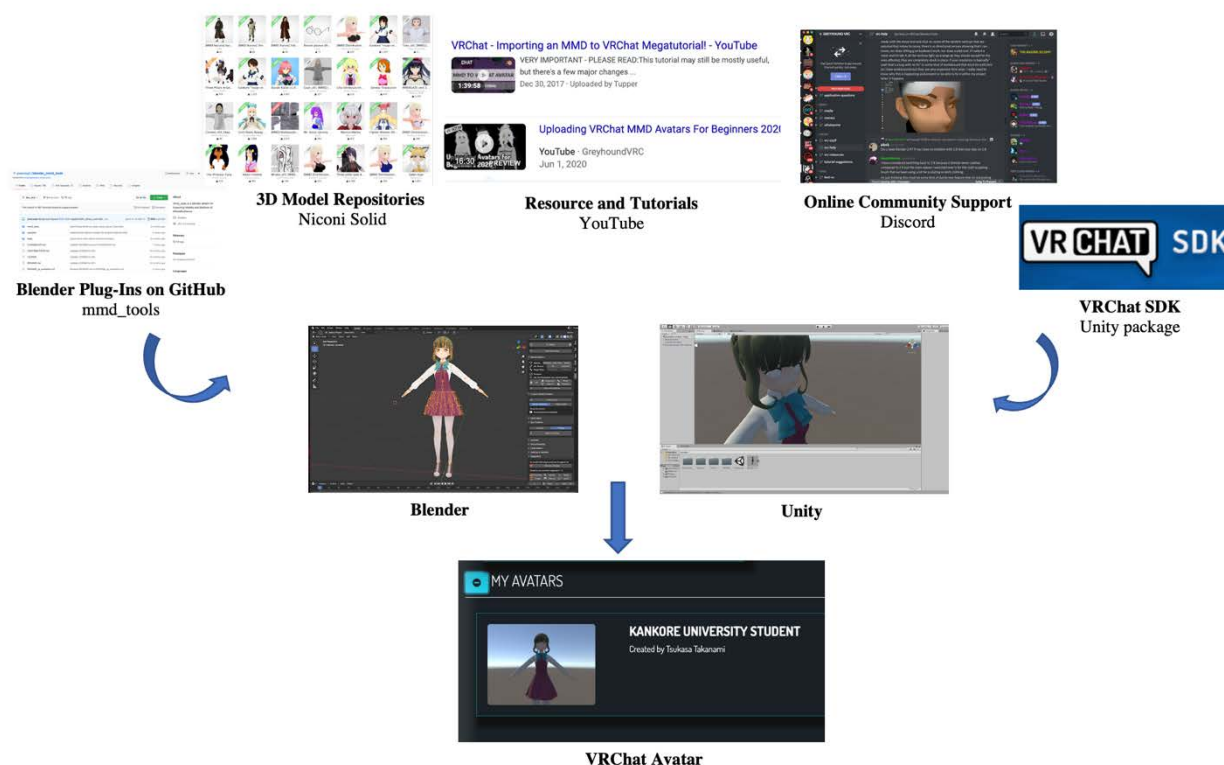


Figure 4.6: Flowchart of MMD-VRChat Avatar Sociodata Ecology

In 2018, Safiya Noble articulated how “algorithms of oppression” filter information on the internet. Challenging notions of search engines as neutral and objective, Noble exposes the discriminatory biases revealed by search results that privilege whiteness while assigning negative

cues to “Black,” “Asian,” or “Hispanic” keywords. Studies of information retrieval are dominated by the advertising industry, prioritized for making profit over equitable information access. Similarly, my explorations searching for an avatar also posed such challenges. Relying on the objectivity of the YouTube algorithm, I collected a sample of the most viewed videos using the search phrases: “vrchat avatar” or “vrchat tutorial” and “vrchat mmd.”











Image	Title, # of Views, Date, Username, # of Subscribers	Image	Title, # of Views, Date, Username, # of Subscribers
	VRChat - Importing an MMD to VRChat Megatutorial! 360K views Dec 30, 2017 Tupper 6.35 K subscribers		How to Add Clothing to your VRChat Avatar (EASY) 82,320 views September 5, 2019 GreyhoundVRC 9.63K subscribers
	VRChat - How to get a Custom Avatar - Part 1: Blender 163,961 views December 31, 2017 Sir Vown 1.08 K subscribers		Uploading Your First Avatar on VRChat as a Beginner from Zero - 2020 Version - Lesson 1 54,822 views July 18, 2020 Comfy Chat 1.46 K subscribers
	How to Create your first Custom VRChat Avatar 2020 Lesson #1 Blender 146,822 views September 5, 2020 Aggrotard 2.54 K subscribers		How to make an mmd model or vrchat avatar with the PMX Editor MMD School Tutorial 11 54,851 views March 28, 2020 LittleShadowGirlProductions 479 subscribers
	Blender 2.8: How to import MMD Models & Motions 80,052 views January 22, 2020 baby WOGUE 15.4K subscribers		Blender Beginner Walkthrough VRChat Avatar Tutorial 50,639 views July 8, 2020 Ask Amber 4.97 K subscribers
	[VRCHAT] easy dynamic bones tutorial 73,174 views February 22, 2018 Stefchap 743 subscribers		VRChat Custom avatar in 18 minutes! 2019 edition! Blender to Unity as fast as possible. 446,609 views Jan 15, 2019 Lhun 2.63K subscribers

Figure 4.7: Sample selection of MMD-VRChat Avatar Creation Tutorials on YouTube

The aesthetic form and data structures of an avatar encompass the shape, form, and colors used for the avatars, and how particular plug-ins and modeling properties determine these factors. Using the MMD humanoid structure, users are able to customize the body and add clothing. Recalling Saunder’s notion of labor processes being the new locus of producing desire, the imagery of the anime girl, whose base model is simply the unclothed body, the corporality of the avatar body with features coded as female is foundational to the processes of becoming with the anime girl avatar.

Analysis of Four MMD-VRChat "Dynamic Bones" Tutorials on YouTube

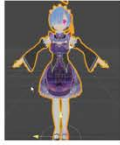


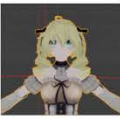
Image	Video Information	Quotes from video	Themes evoked																																
	[Unity Tutorial] Dynamic Bones & Shaders for VRChat! Jan 12, 2018 33,566 views Senpoi	"I have dynamic bones on both of her breasts because boob physics is a beautiful thing [laughs]. There's also dynamic bones in her hair, the ribbon on her hair, and her skirt."	Humor to normalize objectifying female body parts Privileging hair, ribbons, and skirt as feminized characteristics																																
	VRChat Tutorial - Breast Physics (Dynamic bone) Oct 10, 2017 36,535 views Cats Cats	"Your character is now having jiggly physics. Yup, there you go. It's moving!" "Now you are colliding your hands with your breastbone. Have fun with that."	Reinforces the idea of the female body as an object of play and touch																																
	VRChat Tutorial: How To Add "Jiggle" AKA DYNAMIC BONES to an Avatar in Unity Mar 19, 2020 39,642 views AskAmber	"I like to think of elasticity as how much it turns into putty when you're using it. So, if you have low elasticity, it will be very fluid, if you have higher elasticity it will be stiffer."	Objectification of body parts using material and physical referents to its materiality																																
	VRChat Tutorial - Dynamic Bone: Hair, breast, cloth, tail physics; + what values I use! Dec 8, 2017 106,852 views VRChat Moments	<i>[Text from the video description box and reformatted]</i> Values that I use in the settings: <table border="0"> <tr> <td>Hair:</td> <td>Clothes:</td> <td>Breasts:</td> <td>Tail:</td> </tr> <tr> <td>Update rate: 60</td> <td>Update rate: 120</td> <td>Update rate: 90</td> <td>Update rate: 90</td> </tr> <tr> <td>Damping: 0.2</td> <td>Damping: 0.2</td> <td>Damping: 0.2</td> <td>Damping: 0.2</td> </tr> <tr> <td>Elasticity: 0.05</td> <td>Elasticity: 0.005</td> <td>Elasticity: 0.1</td> <td>Elasticity: 0.05</td> </tr> <tr> <td>Stiffness: 0.8</td> <td>Stiffness: 0.9</td> <td>Stiffness: 0.8</td> <td>Stiffness: 0.7</td> </tr> <tr> <td>Inert: 0</td> <td>Inert: 0.5</td> <td>Inert: 0.5</td> <td>Inert: 0.5</td> </tr> <tr> <td></td> <td></td> <td>Radius: 0.06</td> <td>Radius: 0.15</td> </tr> <tr> <td></td> <td></td> <td>End offset: x: -0.1; y: y: -0.1; z: 0.3</td> <td>Gravity: y: -0.002</td> </tr> </table> I usually leave it at default for anything else	Hair:	Clothes:	Breasts:	Tail:	Update rate: 60	Update rate: 120	Update rate: 90	Update rate: 90	Damping: 0.2	Damping: 0.2	Damping: 0.2	Damping: 0.2	Elasticity: 0.05	Elasticity: 0.005	Elasticity: 0.1	Elasticity: 0.05	Stiffness: 0.8	Stiffness: 0.9	Stiffness: 0.8	Stiffness: 0.7	Inert: 0	Inert: 0.5	Inert: 0.5	Inert: 0.5			Radius: 0.06	Radius: 0.15			End offset: x: -0.1; y: y: -0.1; z: 0.3	Gravity: y: -0.002	Prioritizing the customization of hair, clothing, breasts, and tail Specification of value preferences express a desire for control through technical mastery
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Figure 4.8: Analysis of four MMD-VRChat avatar tutorials on YouTube

The MMD-VRChat avatar has a number of interactive properties including dynamic bones and colliders, which enables aspects like one's hair and hands to interact with itself and other objects. In my search of "vrchat dynamic bones" tutorials, tutorials emphasize the particular interaction mechanisms such as being able to touch one's own breasts and enabling them to be touched and perfecting the movement of long hair. The users leading the tutorials use humor to normalize objectifying female body parts and reinforce the idea of the female body as an object to play and touch. Moreover, while working with 3D models, one user uses the words "jiggly" and "elasticity" in describing the properties of the model, blending language referring to physical materiality with the technical codes that program them into the body. Moreover, the practice of technical specification and mastery also reinforce a notion of control.

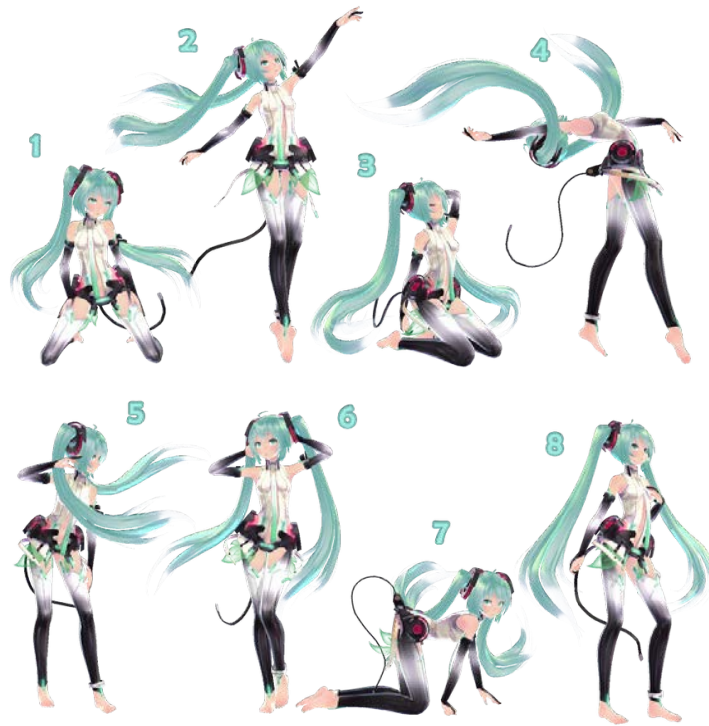


Figure 4.9: A "Pose Pack" for MMD models that can be used to animate them (Created by Snoarlxin, Sourced from DeviantArt)

Alternatives to creating one's own MMD model include browsing avatar worlds, commissioning avatar creators, or creating 3D models from scratch. In terms of breaking into the creative landscape and becoming a creator, however, the largely crowdsourced nature of educational tutorials and *VRChat*-specific plug-ins, however, privilege the customization of MMD models. A recent option includes Vroid Studio, which standardizes the anime aesthetic even further, and enables a simple interface from which to export customized models.

Discussion and Analysis

Finding 1: The cultural production of MMD-VRChat avatars reinscribe bishōjo fantasy tropes about Asian women found in commercial capitalism, otaku fan culture, and soft power initiatives in Japan.

Finding 2: MMD-VRChat avatars privilege whiteness and the male gaze in their aesthetic and technical form. The skin tone and gender of MMD-VRChat avatars operate as aesthetic technologies that reinforce techno-orientalist ideologies.

Being an anime girl is not a neutral aesthetic, but one situated within a cultural history. Avatar bodies come from data structures with historical-cultural origins, and many cultural biases are carried over in its form and interactive properties. Not only do technical aspects, such as the 3D animation rig, become “remediated” into *VRChat* avatar bodies, but ideologies also become coded in their forms. For example, the skin tone and gender of the avatar operate as aesthetic technologies with signifying power. For instance, the racial ambiguity of anime girl avatars privileges whiteness, and the appeal to overtly feminized body features reflect a male gaze. a material emphasis on male corporeal-visual pleasure

According to a survey of largely Caucasians, Amy S. Lu’s study on perceived racial categories of anime characters revealed “that, despite the small proportion (20 out of 341) of intended Caucasian characters, more than half were perceived as Caucasian,” a phenomenon she terms “Own Race Projection (ORP)” (Lu, 2009, pg.183). Moreover, “more than 98 percent of the characters intended to be Asian (180 out of 183) used in this study were drawn as Japanese.” In this way, the “perceptual ambiguity” of race of anime characters operates in three possible ways: “depoliticize internationalization,” Japanify a multi-cultural future, and “establish Japan” like the

West (Lu 2008, p.169). Each of these cases serve neoliberal flows of information, reviving old imperialist dreams through globalizing commercial capitalism. MMD, online fan culture, and bishōjo imagery are intertwined with commercial advertising, neoliberal values, and soft power initiatives in Japan that profit off of fantasized depictions of Asian women.

In her article, “Cute Masquerade and the Pimping of Japan,” Laura Miller analyzes Japanese government-sponsored ideology and nation branding through the concept of “Cool Japan” and how it “reifies and officially promotes male geek culture” and erases the creativity of young women. In a 2009 soft power initiative by Japan's Ministry of Foreign Affairs, three women were appointed to promote Japanese commerce and tourism internationally. While traveling, these “ambassadors of cute” were required to wear uniforms of “The Schoolgirl, the Lolita, and the Harajuku teen,” evoking deep-rooted histories in which women's bodies were deployed to promote nationalism in military and commercial ends, contemporary versions of “geisha commodification.” According to Miller, the “otaku ethos” embraced by Cool Japan is built by displacing female innovators and cultural producers and persistently projects women and girls as “objects of paternalistic desire and control.” In effect, the “uncomplicated cuteness” of images of femininity perpetuates existing gender stratifications in Japan. Likewise, kyara is situated in a commercial media economy that privileges “slim, pale, young, and 'pure' bodies above every other,” deployed as nationalist branding in the Japanese tourism industry. The parallel between the fantasy of ideal travel and taking on new identities in cyberspace so well-articulated by Lisa Nakamura is a strategy being readily deployed by Japanese nationalist and commercial initiatives themselves.

Clothing as a racial technology has been used as a technique for racial visibility since the early 1900s. As Minh T. Pham writes, “Clothing has long been foundational to Western

epistemologies of race and the maintenance of dominant social hierarchies" and "is embedded with racial and gendered ideologies" (Pham 2014). Fashion and clothing can serve as aesthetic devices that externalize and reinforce hegemonic power structures. Taking the example of Paul Poiret's Orientalist fashions at his "Thousand and Second Night" party in which 300 guests were dressed in "harem pantaloons," tunics, and rightly wrapped skirts to simulate being a Chinese woman with bound feet, Pham's concept of an "aesthetic technology" connects "the virtualization of racialized environments and bodies" and clothing. In a similar way anime girl work to reinscribe racial and gendered categories as aesthetic technologies.

4.4 Key Insight

Key Insight: Avatars bodies are composed of data structures with historical-cultural origins and interactive properties that act as affective investments. The avatarization of anime girls reveal the operative power of digital material and the need for more co-creative approaches to virtual embodiment.

The first key insight of this thesis is that social VR fosters a culture of performativity, particularly that of distributed online identities (as articulated, "hypermediated selves"). The second key insight specifies how affective investments are imbued in avatar bodies, enacting technical agency and personhood. While I encountered cyberpunk chic more as a nightmare than a dream, what this theoretical conjecture did reveal (perhaps, provoked) through social VR is the animated properties of digital material and their power to act upon space. As a result of this power, there is a need for more diverse varieties of affective engagements with avatars that rely less on corporeal realism, control, and the lens of desire.

Particularly, this has important stakes for Asian women whose bodies are exploited in cyberspace at a disproportionate scale, with 96% of deepfake videos being nonconsensual

pornography, nearly 25% of which are South Korean women alone (Dickson 2019). The avatarization of anime girls also reveals the operative power of digital materiality and how it reproduces of cultural bias. In particular, the affective investments in anime girl avatars privilege whiteness and the male gaze, using skin-type, gender, and corporeal realism as aesthetic technologies.

Expressions of virtual embodiment from feminist perspectives have been performed by new media artists, with various assemblages of virtual worlds and modes of interfaces at play. Artists have depicted themes of gender dysphoria and transition (Cárdenas, 2009), choreographed feminine angst in MMD (Bergen, 2020), interrogated masculinity in *VRChat* (Cortese 2019), and used Vocaloid to perform Hatsune Miku confronting her own image (Halo and Matsutoya, 2017).²¹ These forms of virtual embodiment carry a spirit of exploration that I aim to apply in my own creative work.

²¹ Hatsune Miku used the MMD software through dance to choreograph a cyborgian reformulation of her embodiment. In *Becoming Dragon*, Micha Cárdenas spends 365 hours in Second Life via a head-mounted display to perform the space in between virtual and corporeal existence. Cardenas' performance meditates on the feelings of gender dysphoria that affect trans individuals. Similarly, in 2019 Michelle Cortese spent 4-hours in VRChat in a store-front performance of gender identity. During this period, she confronted and interrogated players on their choice of anime girls as avatars. Her results amounted to both performances of masculinity and "surprisingly sincere gender play" from cis straight men. Finally, Laurel Halo and Mari Matsutoya's performance entitled *Still Be Here* and uses Vocaloid voice synthesis to embody and perform Miku.



Figure 4.10: Mari Matsutoya in performance art piece, one part of Still Be Here

Social VR offers possibilities for sincere identity expression and transcultural learning, but many socio-technical dynamics are at play. Avatars, like masks in theatrical dances or shamanic ritual, negotiate power through alternate personas. Likewise, separately from the individual users' intent and actions, the avatar body and its social imaginary hold agential power in social VR space.

With design principles that make visible rather than mask such power dynamics, new visions for virtual embodiment can be imagined based on more pluriversal values. For example, *cybershamanic worldmaking* embraces the space of performance and the possibility for deep affective engagements with virtual personas, but with a particular creative praxis. Virtual worldmaking requires rethinking the material lives of avatars, digital artifacts, and others by considering them as agents with whom to co-create rather than place as an object of affective

desire. Virtual worldmaking considers the historical-cultural contexts and personhood of bodies at play.

How could we think of the agency of anime girl avatar bodies? Here, we return to not the Avatar Dream but the nightmare. Shōjo is not the “new god” of posthuman potential, nor does she represent a liberatory “openness” to technology (Lamarre, 2009); rather, she is a greedy spirit. Shōjo is a ghost, the spirit of the anime girl avatar who haunts cyberspace. Recall Mari Matsutoya’s call for “queering” Hatsune Miku by envisioning “a pregnant Miku, throwing up Miku, menstruating Miku, sweaty Miku, etc., embracing all the physical bodily blubber (Matsutoya, 2020:131).” If Hatsune Miku is “the Avatar Dream,” the Shōjo Ghost proposes a different sensibility. The Shōjo Ghost is constantly hungry and all consuming, endlessly satiated by performative rituals of heteronormative masculinity. She is characterized by longing, or a yearning desire, driven by unresolved emotions. A virgin spirit, “a shared totem,” she embodies the desiring woman arrested in girlhood as much as her wrath toward this paradoxical condition (Jones and Matsutoya, 2017).²² Seeking more and more, she haunts cyberspace and proliferates the desire for her image, existing for those who can see her although her presence is felt by all.

“When our seventh-generation descendants explore whatever the latest incarnation of virtual space might be, they will find ghosts,” writes Indigenous scholar Jason Edward Lewis. “Those ghosts will be the remnants of the epistemologies and ideologies that build those spaces— the phantasms in operation at their birth. Those ghosts will tenaciously inhabit cyberspace despite all attempts to exorcize them” (Lewis, p.246). Likewise, the ghost of shōjo is

²² My concept of the shōjo ghost is inspired by the legend of Haesindang, who is a virgin ghost spirit (and sea spirit) in a fishing village in Jejudo Island, Korea. As legend goes, Haesindang is a young maiden whose fiancé left her on a rock while he was going to fish. She got washed over the shore and passed away. Her virgin spirit, not having fulfilled her womanly purpose, raged over the village. To appease her spirit, the villagers would erect phallic statues around her shrine. Likewise, the shōjo ghost is also satiated only by rituals of heteronormative sexuality.

a remnant of culture, a powerful expression of virtual worldmaking. Computational media is never neutral but baked with cultural phantasms that move in mysterious ways that require a new mythology for virtual space. Considering the agency and personhood of nonhuman digital artifacts, which I describe as its materiality, I gesture toward more equitable social relations in digitally mediated virtual worlds.

Similarly, to "techno-animism," where technology holds spiritual characteristics (Jensen 2013), and new materialism, where objects hold agential properties, cybershamanic worldmaking engages in an interpretive project to ascribe agency and notions of personhood to nonhuman objects that challenge Western concept of the body.

V. Conclusion

Virtual reality engages with discourses of power. The popular imagination and military-industrial history of VR reflect Euro-centric worldviews that center capitalistic and patriarchal values. To become "embodied" in virtual reality requires critical engagement with the form of embodiment being suggested by the perceived affordances of VR. Doing so allows for the consideration of alternative affordances for VR that reimagine non-hegemonic forms of virtual embodiment that are more oriented toward social inclusion and pluralistic values. These differences reflect the tensions in modernity between ideologies that actively produce exclusions, such as colonialism and patriarchy, with those on the margins of techno-scientific worldviews, such as shamanism.

The two key insights that emerged from my analysis of anime girls in *VRChat* are that social VR fosters a culture of performativity and that the avatar bodies are imbued with affective investments that require new conceptions of its agency and personhood. Bringing together these two insights, I offer a creative proposition for reconsidering virtual worlds. Rather than imaging selfhood in VR through the "Avatar Dream," which is built on the individualistic desire to transcend one's body and be whoever one wishes to be, I conceive of selfhood in VR as a more fluid construct through the lens of virtual worldmaking.

To conclude, I propose one instantiation of pluralism of virtual embodiment through the concept of *cybershamanic worldmaking*, which centers social and political memory in envisioning and affecting the future. Social VR reveals itself as a technology integral to catalyzing cybershamanic worldmaking practice.

5.1 Toward Cybershamanic Worldmaking

Cybershamanic worldmaking draws from the domains of media and performance art, anthropology, and cultural theory and centers the preservation of cultural memory in the face of rapidly changing economic, sociopolitical, and technological worlds. Addressing the remnants of imperialist ideologies predominating contemporary conceptions of virtual worlds, cybershamanic worldmaking actively exorcises such forces in theorizing relationships to socio-technological systems. In particular, cybershamanic worldmaking centers social and political memory in imagining the future through the production of affect and embodied memory.

Conflations of the spiritual and technological harken back to social anxieties surrounding the telegraph in 1848, when a young girl reported "telegraphic" contact with the spirit world. The way the telegraph became appropriated into spiritual beliefs, in its evocative ability to "be in two places at once," reflects the role of new technologies in challenging assumptions about being-in-the-world; in the American Spiritualist's case, it is similar to how spiritual mediums transgressed boundaries of the living and the dead (Sconce, 2000). What this also reveals, however, is that reaching alternate states of consciousness has never been a condition unique to technology, nor has Western society always been naturally predisposed to a techno-scientific worldview. Rather, technologies of modernity, from the "spark" of life in Galvani's frog leg to Frankenstein's monster, have been a source of mystery, speculation, and imagination that evoke deeply held cultural beliefs in making sense of a changing world.

Cybershamanic worldmaking does not aim to increase the mystification of technology in ways that ascribe spiritual value to technical phenomena. Nor does it attempt to appeal to moralistic values through technology, as was the case with Shintoism and Italian Futurist appropriations of technological power for fascist ideologies. Rather, cybershamanic

worldmaking draws from shamanic epistemologies to inform how modern technologies can be subversively used for values antithetical to those of modernity.

Though many forms and definitions of shamanism exist and are constantly contested, in this thesis I draw from aspects of shamanistic practices in northeast Mongolia and its contemporary revival after decades of state suppression. Following the lives of Buryat nomads, anthropologist Manduhai Buyandelger documents shamanic practice in the village Bayan-Uul after decades of marginalization under socialism. Through their performances of spirit worlds, Buyandelger theorizes ritual as personal yet collective virtual spaces driven by affect and interactivity. These virtual spaces can resist the logics of capitalism by building elaborate storyworlds. As Manduhai Buyandelger writes of Buryat worldviews in Mongolia, "the ultimate work of shamans in reconstituting the past [...] is not history, but memory - knowledge of the past that is emotionalized, embodied, and attached to an individual." They do so by preserving affective memories through the body in ritual:

"Unlike official state histories of victorious revolutions and successful modernizations, the history that shamanism recreates is profoundly tragic... hierarchies of gender and age and norms of politeness and propriety are transgressed; male and female spirits alike drink alcohol, smoke pipes, sing songs, tell jokes, spit, toss cups, cry, and enact anger and hurt, experiencing vicariously the pleasure of the life out of which they were too quickly ushered..." (Buyandelger, 2013)

As healers, priests, performers, and prophets, shamans revive gaps and omissions in cultural memory through practices of remembrance. Centered on performance and recalling ancestral, the shaman builds ritual worlds that mediate, produce, and prophesize cultural realities. Shamans and the communities they serve make sense of the impacts of capitalism (the scope of which may be masked from marginal communities). In this way, the spirits that emerge from capitalism are spirits of resistance who are re-equipped with a different kind of agency.

Shamans also imbue ritual artifacts with agential power in their processes of virtual embodiment. Shamanic performances "enacted memories realized through multiple media, such as gesture, language, food, music, and material objects" (Buyandelger, 2013), reflecting the intertwined relation between material artifacts and access to virtual world. In many ways, such artifacts are not only visualizing technologies to "see" spirits but are media technologies, as is the human body, to embody and become them. Cybershamanism in South Korea also use media technologies in particular ways. Cybershamanism refers to contemporary shamanic practice that intersect with consumer electronics, technology, and indigenous shamanic practice. Cybershamans engage in a variety of new media practices, including using websites for advertising, television and film, and virtual consultations, and reflect the adaptive quality of shamanistic practice in the face of modernity.

Cybershamanism is a term used in two ways, "as a self-designation by some neo-shamans who are regularly online to promote their spiritual content or by virtual artists who work in the spheres of magic and mysticism" (Schlottman, 2014, p. 34). The artistic integration of shamanistic concepts in art is well documented in Diasporic performances of identity. In literary scholar Soo Mi Lee's dissertation study of three Zainichi, Korean post-colonial immigrants to Japan, women's autobiographical voices identify a shamanic trope in their storytelling in which their own physical body is conceived of as in-between entities in relation to their diasporic existences in post-war Japan. As she writes:

"In constructing an 'I' that emerges beyond the limits of either subject or object, each woman performs a shamanic identity of her own choosing - an identity that is both personal and collective - through which to speak to the female ancestors she identifies with, through shared hope for social transformation" (Lee, 2014)

In this case, shamanic identity serves a narrative function and reframes art and storytelling for personal and community healing. Such approach with shamanic identity is also shared by

Theresa Ha Kyung Cha's identity in her book *Dictée* (1982), where she evokes Greek and Korean mythologies, female revolutionaries like Joan of Arc and Yu Guan Soon, and deconstructions of language in this poetic auto-biographical reflection. Notably, shortly before her book was published, Cha was raped and murdered behind a building in New York City. The pain of this act of violence and the continued cultures that oppress Asian women is recalled and revived in the life of her book.

5.2 Analysis of *A Place of Care* VR Performance

A Place of Care is an immersive performance and healing space that uses social VR and live video broadcasting. For the final project for the AFVS.157L Immersive Experience as Art course at Harvard University, I performed a live walk-through in front of an audience via video conferencing. Viewers were instructed to turn off their videos and participate in an audio meditation that facilitates a simple massage experience. A Place of Care is originally designed as a social VR experience for up to 16 people using PC-based VR.

Inspired by a blog post by artist-activist Yin Q reflecting of the 2021 spa shootings in Atlanta, the aim of this piece is to center the massage room as a "place of care" rather than one of violence, stigma, and fetishization (Q, 2021). Through the guided meditation, I emphasized the physicality of the body in the virtual experience, grounding it in everyday life. By placing participants at a site of intimacy, I wanted to highlight the vulnerability of our bodies when care workers attend to it. This care is juxtaposed to the violence toward Asian and migrant women we see in America today. Featuring a screening of Salpuri-chum, a dance from Jeolla-do region of Korea accompanied by Shinawi music recorded by the National Gugak Center, this piece follows similar themes of addressing sorrow and the release of powerful energies.

5.2.1 Description



Figure 5.1: Screenshot by author of the exterior of the entrance into the scene in A Place of Care

The beginning is meant to evoke the fear and confusion toward the news of the shootings, and fragmented pieces of information from the media. After walking through a tunnel listening to a The viewer takes the point of view of a ghost, from past or present, with unresolved tensions and gloats over the scene, into the front doors of the spa.



Figure 5.2: Screenshot by author depicting the user approaching a 360° video sphere in which a woman performing the Salpuri dance is screened, Video by the National Gugak Center of Korea.

Once entering the spa, the participant begins to hear the sound of drumming and watch a video of a woman in a traditional, white hanbok performing Salpuri, a shamanic dance well known in Korea for exorcising spirits. Stepping inside the video, they are immersed in the performance. As the music and video fades out, we are prompted to move toward the massage rooms in the distance. The participant enters their respective massage room and are then guided by an audio meditation.



Figure 5.3: Screenshot by author of video documentation of A Place of Care performance

Using autonomous sensory meridian response (ASMR), which is an auditory sensation often provoked through recording methods such as using high-quality microphones, as an aesthetic technique, an overhead voice prompts the participants to begin massaging their hands, their shoulders, their arms, to sit with themselves and reflect on being in a massage room, a place of care. The aim of this scene is for participants to reflect on their personal relationships to the massage room space. Finally, the participants are drawn to the beach outside the massage room. It is now daytime. Participants are encouraged to change their avatars back to their usual. Recorded sounds from a march for Asian lives following the weekend of the March 16 incident begins to play, into a gathering space of collective power.

5.2.2 Discussion and Reflection

Most centrally, this piece leverages the embodied dimensions of VR to bring attention to the body, and the layers of stigma, ignorance, or fears that might prevent people from confronting real world spaces and issues. As an Asian-American woman, I had many trepidations from using the imagery of the massage room so closely following the event. I found myself adopting problematic logics of the mainstream media, either conflating all massage work with sex work or erasing the political specificities of migrant sex workers altogether. These tendencies, I realized, contrast with the pervasiveness of massage and body work by Asian and migrant women as an established field of care and medicine, especially with other working-class groups. Given that many people are still impacted by both anti-Asian and anti-sex work sentiments, I identified a greater need for learning about the transnational history of sexual labor and violence against Asian women. Moreover, the confusion and displacement caused by the oversaturation of media, evoking the affective weight of the massage room as a physical place, was integral, as it brings an embodied dimension to cultural memory.

For this reason, while participants are guided into the virtual space with particular imagery and a narrative, I incorporated an audio meditation which doesn't require the use of vision. In this way, sound and physical touch are mechanisms that ground the interrelation between the physical body and world and virtual space. Moreover, beyond taking form as a metaphysical entity accessing virtual space, the identity of the avatar is left ambiguous.

The self-reflective process of making this piece was central toward developing the cybershamanic worldmaking concept, which is in early stages. On March 17, the morning after news of the shooting erupted, I had a virtual divination session with a shaman who later shared personal ties to anti-Asian and anti-sex work issues in NYC. I also drew from an Instagram-

based network of Korean American artists and artisans (mostly based in LA) who are part of various Diaspora-centered collectives. As part of my research, I also went to a local Chinese-owned massage business near my apartment in Somerville, MA. The website gave the option to book one of three workers: Pei, Lisa, and Jenny, giving a subtext of service-oriented women's labor, not unlike the imagery of anime girl avatar pedestals in *VRChat*. Context, I realized, is essential for our bodies feeling comfortable, relaxed, and safe, to be able to feel comfort and care, and this experience evoked the racial politics of body work, historically and now.

As an artist and performer, *A Place of Care* has enabled me to explore the relationship between the body, perception, and knowledge, beyond the realm of media discourse and into the realm of embodied action. A mystical place that blends documentary audio of the police dispatch call, news article headlines, photorealistic scans of a strip mall, a recreation of one of the spa business storefronts, and audio from a solidarity march for Asian lives, *A Place of Care* brings multiple media modalities together. The piece is a method of cybershamanic worldmaking, which synthesizes of time (past, present, future) and place (digital, physical, and otherwise) through modes of embodiment that involve actors and situations across multiple realms.

Although full technical vision of this piece is not yet realized, the technical limitations gave myself permission to perform the work in a way that highlights my identity as a Korean American woman, one that can be empowered by both giving and receiving care. In bridging my connections to issues that Asian women face transnationally in an intimate, highly personal way, this performance was a healing, inspiring, and empowering experience in virtual space.

5.3 Summary and Future Work

The full scope of this thesis centers my body in both contemporary sociopolitical space and cyberspace. Both contexts raise issues about bodies gendered as female and how the

circulation of affective investments exclude the realities of Asian women's lives. In my analysis of *VRChat* as phantasmal media, I observed the affect and affordances of social VR, and how experience unfolds at its perceptual interface. As a new media interface, social VR provokes sensorial-technical affect that influence how users relate to the objects within the world.

Learning about the sociotechnical rule systems of the platform and game are foundational aspects to user agency. Secondly, I found that despite the positivistic promises of heightened social presence, social VR risks reproducing gendered exclusions in discriminatory ways. My third finding is that the techno-orientalist design of virtual worlds produces box effects in forming virtual identity. A key insight from this study that social VR fosters a culture of performativity, particularly that of distributed online identities (as articulated, “hypermediated selves”)

In my analysis of the anime girl avatar, I found that MMD-VRC avatars privilege whiteness and the male gaze in their aesthetic and technical form. The skin tone and gender of MMD-VRC avatars operate as aesthetic technologies that reinforce techno-orientalist ideologies. Tracing the historical-cultural origins of the *bishōjo* figure shows the entanglement between digital culture, commercial capitalism, male desire, which profit off circulating images of women's bodies, and how MMD-VRC avatars reinscribe such tropes in its design. One key insight from this is that avatars bodies are composed of data structures with historical-cultural origins and interactive properties that act as affective investments. The avatarization of anime girls reveal the operative power of digital material and the need for more co-creative approaches to virtual embodiment.

Drawing from my key insights from each section, namely that social VR fosters a culture of performativity, that avatar bodies are invested with affect and technical agency, and that we

need new visions for virtual embodiment, I approached critical-computational empowerment through a creative praxis. Throughout this thesis, my agency as a user of *VRChat* and technical creator has evolved. Within the scope of this thesis, I was not able to fully flesh out the notion of cybershamanic worldmaking and how ritual inspires a form of virtual embodiment. Especially for unpacking the concept of ritual, more careful analysis and literature on this regard is needed to better integrate it as a concept of cybershamanic worldmaking. For my future work, as part of my Fulbright Fellowship in Korea, I will research how production processes in traditional Korean performance arts, such as mask dances, relate to objects, design, and craft. I am curious about the affective investments between artisans, performers, props, and audiences through the storyworlds of a performance and broader folk mythologies. In this way, I am interested to further develop theorization and dramaturgical principles for using social VR in a performance arts context.

Virtual reality colludes various types of imperial and exclusionary forces such as Eurocentrism, techno-orientalism, and the male gaze. As Hito Steryl articulates in a 2021 speech at MIT, we need to “decolonize the digital sphere,” not only metaphorically, but also by first considering the digital as a domain of the real. This thesis and *A Place of Care* argue that virtuality is a space grounded in the inseparable relations between mental imagery, bodily affect, and possibilities for action. Virtual worldmaking begins by making transparent these interrelations and aspires to reimagine our conception between these realms.

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