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### Recommended Citation

Amital, Eden Noa, "Developmental Measures: The Zika Virus, Microcephaly, and Histories of Global Northern State Anxieties" (2017). *Scripps Senior Theses*. 1035.  
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**DEVELOPMENTAL MEASURES:  
THE ZIKA VIRUS, MICROCEPHALY, AND HISTORIES OF GLOBAL  
NORTHERN STATE ANXIETIES**

by

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**SUBMITTED TO SCRIPPS COLLEGE IN PARTIAL FULFILLMENT  
OF THE DEGREE OF BACHELOR OF ARTS**

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**APRIL 21, 2017**

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## ABSTRACT

This project seeks to understand anxious and fearful responses to the Zika virus and microcephaly that began circulating widely in February, 2016. My project works to uncover racial histories embedded in the contemporary scientific and medical practice of measuring head circumference. By arguing that microcephaly is a racialized metric of civilizational and human development, I show that responses to Zika's proliferation invoke state security because Global Northern states imagine microcephaly as a developmental, economic, and cultural lag. Dominant scientific and medical characterizations of microcephaly constitute modern, developed states as such by making political conceptions of normalcy and capacity seem natural: microcephaly is marked as "abnormal" in the scientific literature that instructs the measurement, surveillance, and diagnosis developmental and cognitive disabilities. Seemingly disparate contemporary moments and histories—among them the 2016 Rio Olympics, histories of racial purity and contamination, phrenology, and eighteenth-century racialized notions of sexuality—are inextricably linked to ideals and practices of white, bourgeois subjectivity. Like the diagnostic category of microcephaly, these ideals and practices are inherently unstable and insecure: they cannot exist nor materialize without the economic and social exploitation of racialized and disabled populations.

## INTRODUCTION

Scientist and lawyer Amir Attaran begins his impassioned argument that the 2016 Rio de Janeiro Olympics should be rescheduled or moved by stating that “Brazil’s Zika problem is inconveniently not ending.”<sup>1</sup> Staging the Zika virus as an inconvenience to the Games’ attendees frames Brazil as a site of entertainment for Global Northern desires. Despite tourists’ potential disappointment, however, choosing not to cancel the Games risks too much: “All it takes is one infected traveler ... [to] make a full-blown global health disaster.”<sup>2</sup> Should the Olympics take place, Attaran anticipates, both Zika and microcephaly—the virus’s corollary, which is diagnosed at birth by measuring an infant’s head circumference—will spread, inflicting “a foreseeable global catastrophe” and “extinguish[ing] the hope of a normal life even before it has begun.”<sup>3</sup> The kind of microcephaly at risk of proliferating involves “brain damage ... severer than classical microcephaly ... [and] is as terrible as it sounds.”<sup>4</sup> Attaran criticizes both the International Olympic Committee’s “months-long silence” and the World Health Organization’s (WHO) refusal to condemn the Games, writing that the “WHO’s hesitancy is reminiscent of its mistakes with Ebola, all over again.”<sup>5</sup> His invocation of Ebola—a virus to which the American public, media, and medical-industrial complex responded with virulent anti-blackness and racial profiling—works to racialize both Zika and microcephaly as threatening materialities that

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<sup>1</sup> Amir Attaran, “Off the podium: why public health concerns for global spread of Zika virus means that Rio de Janeiro’s 2016 Olympic Games must not proceed.” *Harvard Public Health Rev* (2016).

<sup>2</sup> Ibid.

<sup>3</sup> Ibid.

<sup>4</sup> Ibid.

<sup>5</sup> Ibid.

have no place within the borders of Global Northern states.<sup>6</sup> White supremacist ableism sanctions the crossing of Brazil's borders during the course of the Olympic Games under the condition that such transgression leave no visible nor viral trace once globe-trotting subjects return home.

Sensational media responses to Zika indicate that there are longer historical narratives that contextualize anxieties about the virus and microcephaly. These histories reveal the extent to which the proper development of the modern, bourgeois subject relies on the production and subjugation of primitive Others. These underdeveloped subjects are framed as incapable of regulating their sexual appetites and exercising reason. Attending to the discursive and material construction of certain populations and geographies as underdeveloped shows that ideologies of racial and bodily superiority are co-constitutive. In other words, any nuanced discussion of ableism must articulate that white supremacist logics cite ideal bodily and mental capacities as evidence of European racial superiority. Arguing that normativity is upheld through a process of citing and repeating norms, Judith Butler writes that "...heterosexual performativity is beset by an anxiety that it can never fully overcome, that its effort to become its own idealizations can never be finally or fully achieved."<sup>7</sup> Fears about the Zika virus and microcephaly reveal how deeply indebted notions and practices of proper,

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<sup>6</sup> Matt Saccaro, "Ebola Racism' Is Real - And It's Thriving Across the U.S.," *Mic*, accessed March 19, 2017, <https://mic.com/articles/101660/ebola-racism-is-real-and-it-s-thriving-across-the-u-s#.QVoSKcrqJ>.

<sup>7</sup> Judith Butler, "Gender is burning: Questions of appropriation and subversion." *Cultural Politics* 11 (1997), 384.

white subjectivity are to the construction of racialized subjects as sub-, in- and nonhuman.<sup>8</sup>

In this thesis, I threaten and disrupt scientific narratives and methods that use metrics to ascertain and measure development by tracking histories of race and the creation of difference. Science is popularly understood as objective and divorced from power. By building on critical interventions put forth by activists and scholars of color, my project works to uncover racial histories embedded in contemporary scientific and medical practices of measuring head circumference. By challenging ideas about disability as tragic and threatening—ideas that masquerade and circulate within popular media and medical literature as “common sense”—I show that microcephaly is a racialized metric of civilizational and human development. Therefore, responses to Zika’s proliferation that invoke state security have to do with the developmental, economic, and cultural lag that Global Northern states imagine people with microcephaly will impose. Dominant scientific and medical characterizations of microcephaly constitute modern, developed states as such by making political conceptions of normalcy and capacity seem natural: microcephaly is marked as “abnormal” in the scientific literature that instructs the measurement, surveillance, and diagnosis developmental and cognitive disabilities.

I develop my argument over the course of four chapters. My first chapter, “Racial-Sexual Paradise: Brazil, Zika, and the 2016 Rio Olympics” reviews media

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<sup>8</sup> D. Luciano and M. Y. Chen, “Has the Queer Ever Been Human?,” *GLQ: A Journal of Lesbian and Gay Studies* 21, no. 2-3 (2015): 183-200, doi:10.1215/10642684-2843215.

responses to the heightened levels of sexual and interracial contact predicted to take place at the Rio Olympics. I argue that the historical convergence of the Olympics with the spread of congenital Zika syndrome made transnational, political economies of sex tourism in Brazil hyper-visible. Citing Erica Lorraine Williams's *Sex Tourism in Bahia*, I show that the Global Northern tourist gaze indiscriminately positions Afro-Brazilian women as sex workers, which is an assumption grounded in Brazil's histories of enslavement and colonization. I consider how a sexual encounter between Usain Bolt and a Brazilian woman played out at the Olympics against this historical and contemporary backdrop, and suggest that sex workers are both central to Brazil's economies and a source of anxiety for the state.

My second chapter, "Narratives of Contagion: Zika and Microcephaly as Threats to Global Northern State Security," lays the groundwork for my third and fourth chapters by surveying media and security responses to the virus. I argue that such responses frame Zika and microcephaly as threatening to Global Northern social and economic state security. Public health officials and scholars' representations of microcephaly as a tragic burden that can be measured in Disability Adjusted Life Years constitute the proliferation of children with disabilities as a developmental lag. By arguing that the Zika virus might be mobilized as a weapon of bioterrorism, government officials construe Zika as a racial, economic, and social threat that intervenes on proper development. I briefly examine representations of Zika-transmitting mosquitoes as racially



animated terrorists, which I argue call forth histories of blood mixing and miscegenation.

In my third chapter, I historicize the widespread practice of using standard growth measurements to diagnose microcephaly. Histories of distinguishing between science and pseudoscience have perpetuated the widespread belief that science is non-racist and objective. This chapter argues, however, that white supremacist epistemologies structure scientific methods, findings, and international development campaigns. I analyze and historicize the World Health Organization's contemporary growth chart standards to show that developmentalist standards are aspirational, constructed, and only accessible to bourgeois subjects. Attending to the construction and implementation of standard growth metrics reveals the extent to which scientific definitions of microcephaly are both racialized and unstable.

My fourth chapter is concerned with the inextricability of primitivity, rationality, and excessive sexuality in relationship to microcephaly. I show that cranial measurements are a racialized through line that connect histories of freak shows, social and life sciences, and psychoanalysis. Microcephaly is thought of as a racialized, visible indication of a person's primitive subjectivity. In Global Northern imaginaries and materialities, the supposed irrationality and sexual deviance of people with microcephaly render such subjects incapable of living up to the ableist and racist standards that John Locke's social contract demands. The existence and continued reproduction of people with microcephaly constitute a

threat to the futurity of Global Northern states and the capacity of their national bodies to properly develop.

## CHAPTER ONE

## Racial-Sexual Paradise: Brazil, Zika, and the 2016 Rio Olympics

In the months leading up to the 2016 Rio de Janeiro Olympics, mass media articles sensationalized and expressed concern about the “Hot Athlete Sex”<sup>9</sup> predicted to take place in the Olympic Village. Transnational sexual contact, which is always a target of neo-colonial allure and anxiety, is imbued with particular meanings in the context of the Rio Olympics. Both E! Online's “Olympic Village Sex Secrets Revealed”<sup>10</sup> and Public Health Insider's “Flying Down To Rio? Health Tips For Travelers”<sup>11</sup> caution readers that “What happens in Rio, doesn't always stay in Rio.” Considering that Brazil is “the world's premier sex tourism destination”<sup>12</sup>, I read this warning as expressing discontent with what should otherwise be an uninterrupted neo-colonial fantasy taking place in Brazil: what happens in Rio *should* stay in Rio, but the Zika virus and other sexually transmittable infections might travel home with tourists. The 2016 Rio Olympics marked the site of the historical convergence of a mega-event underscoring globalized routes of contagion with the proliferation of congenital Zika syndrome, which can cause fetuses to develop intellectual and developmental disabilities,

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<sup>9</sup> Garvey, Marianne. “A Brief History Of Hot Athlete Sex At the Olympics.” Bravo TV Official Site. August 04, 2016. Accessed January 22, 2017. <http://www.bravotv.com/blogs/a-brief-history-of-hot-sex-at-the-olympics>.

<sup>10</sup> Lily Harrison, “Olympic Village Sex Secrets Revealed: What's Really Going on at Rio's 2016 Games,” *E! Online*, August 10, 2016, accessed December 5, 2016, <http://www.eonline.com/news/786552/olympic-village-sex-secrets-revealed-what-s-really-going-on-at-rio-s-2016-games>.

<sup>11</sup> Meredith Li-Vollmer “FLYING DOWN TO RIO? HEALTH TIPS FOR TRAVELERS”, *Public Health Insider*, July 27, 2016, accessed December 5, 2016, <https://publichealthinsider.com/2016/07/27/flying-down-to-rio-health-tips-for-travelers/>.

<sup>12</sup>Erica Lorraine Williams, *Sex Tourism in Bahia: ambiguous entanglements* (Urbana: University of Illinois Press, 2013), 5.

namely microcephaly. In order to demonstrate that this historical convergence highlights transnational circuits of sexual and erotic labor that coalesce around neo-colonial desires, I first historicize Brazil's political economies of sex tourism. Then, I take up Erica Lorraine Williams's argument in *Sex Tourism in Bahia* to show that Afro-Brazilian women are, to varying degrees, constituted by the Global Northern tourist gaze as sex workers. In this context, the outbreak of Zika prior to and during the 2016 Rio Olympics results in heightened scrutiny of Brazilian sex workers, who are constituted as vectors of disease by the very subjects who might purchase their services.

Brazil's histories of enslavement linger in the form of anti-black ideologies that are both external and internal to the state. These histories cast Afro-Brazilian women as “servants, sexual objects, or social subordinates”: such positions are based on their proximities to whiteness.<sup>13</sup> In *Negras in Brazil: Re-envisioning Black Women, Citizenship, and the Politics of Identity*, Kia Caldwell argues that darker-skinned Afro-Brazilian women are framed and understood as asexual domestic laborers while the nation-building figure of the *mulata*, or mixed race woman, is deployed in order to construct Brazil as a “color blind erotic democracy” and attract tourists<sup>14</sup>. The figures of the *mãe preta* (black mammy) and the *mulata* have deep roots in slavery. Caldwell reads social theorist Gilberto Freyre's text *The Masters and The Slaves* as the “social and cultural genealogy of elite white males”: within this text, “Afro-Brazilian women are described as playing a central role in the development of white males, from the time they were

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<sup>13</sup> Kia Caldwell, *Negras in Brazil: Re-envisioning Black Women, Citizenship, and the Politics of Identity* (New Brunswick, Rutgers University Press, 2007), 57.

<sup>14</sup> Caldwell, *Negras in Brazil*, 61.

suckled until they were initiated into lovemaking” by *mulatas*<sup>15</sup>. In the enduring Brazilian colonial imagination, *mulatas* incite and fulfill the desires of white men. The purpose of such interracial contact is to initiate white men into sexual subjecthood, as racist patriarchy casts only white women as sufficiently respectable to marry. White male desire for sex with mixed-race Brazilian women works to constitute Brazilian nationhood. By reconfiguring racial miscegenation as a strength unique to Brazil's supposedly “homogenous” nation, nationalists were and are able to elide the “problem” of interracial sex that other postcolonial states have chosen to disavow while making the claim that Brazil was and is not racist<sup>16</sup>. The *mulata* is the central figure around which Brazil's tourist economies are structured. Caldwell explains that *mulatas* have become both “export item[s] and source[s] of tourist revenue[:] ... the term *mulata* has become synonymous with prostitute for many European men who travel to Brazil for the purpose of sexual tourism”<sup>17</sup>. Global Northern conceptions of Brazilian women as hypersexual are legacies of genocide and colonialism: these conceptions manifest in Brazil’s political economies.

Assumptions about Afro-Brazilian women’s sexualities structure Brazil's material sex tourist economies as well as the state’s internal and external discursive representations. In *Sex Tourism in Bahia*, Williams argues that tourists traveling within Salvador assume that “black and brown women in Bahia are either sex workers or at least sexually available”<sup>18</sup>. Such assumptions differ from

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<sup>15</sup> Caldwell, *Negras in Brazil*, 56.

<sup>16</sup> Caldwell, *Negras in Brazil*, 32.

<sup>17</sup> Caldwell, *Negras in Brazil*, 60.

<sup>18</sup> Williams, *Sex Tourism in Bahia*, 6.

those made in Rio: while the *mulata* figures “as Brazil’s national erotic icon”, the image has greater weight and cultural impact in Rio than in Salvador<sup>19</sup>. This distinction is apparent within cultural productions that tourists consume in Rio and Salvador; while the “commodification of black culture in Rio ... revolves around samba and Carnival, which celebrates mixture, borrowing, and cultural patchwork, ... the emphasis [in Salvador] is on roots or heritage tourism”<sup>20</sup>.

Central to Williams’s argument is her characterization of sex tourism’s specter as the “widespread anxiety about the validity and authenticity of romantic relationships between foreign tourists and Bahians.”<sup>21</sup> Within these distinct contexts, Williams argues, tourists in Salvador expect that darker-skinned women will be commercially and/or sexually available, whereas tourists in Rio are more interested in and tend to assume the sexual availability of mixed Afro-Brazilian women. The figure of the *mulata* is not explicitly cited in most Global Northern media that sensationalizes sex at the Rio Olympics. However, paid and unpaid interracial sexual contact occurring in Rio that centers around desire for sexual access to the bodies and erotic labor of *mulatas* structures the tones, expectations, and arguments of articles written about sex at the Olympics.

Jason Diamond writes *Rolling Stone Magazine’s* “Rio Olympics: How Much Sex Are Athletes Actually Having?” as a response to reports of the 450,000 condoms ordered for and disseminated at the Olympics. Describing the attending athletes, he writes, “a bunch of great looking people with flawless bodies, throw in a bunch of Greek imagery ... and people get horny as hell. None of this is

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<sup>19</sup> Williams, *Sex Tourism in Bahia*, 51,

<sup>20</sup> Williams, *Sex Tourism in Bahia*, 31.

<sup>21</sup> Williams, *Sex Tourism in Bahia*, 6.

new”<sup>22</sup>. In this description of “people with flawless bodies” in a context structured by “Greek imagery” is an implicit reference to supreme able-bodiedness as a civilizational ideal. Diamond argues that athletes inherently desire sexual contact with each other, even though in the context of the Olympics such sex is non-reproductive. Athletes' desires to have sex with each other are made even more natural, Diamond implies, given the “exotically” charged context of Rio, where there “are gorgeous locals, tourists looking for a good time, divers, soccer studs ... people [who] are looking to party in Rio.” Through this commentary, Diamond consolidates Brazilians, tourists who are in Rio because they have the financial means to partake in “good times”, and Olympians into a dynamic matrix of desire, comprised of sexualized subjects who are understood as less agential and consumers. Given Global Northern assumptions about Afro-Brazilians as available within a transnational sex market, Diamond's ambiguous use of “good times” can be interpreted as referring to tourists' consumption of sex and other kinds of erotic labor.

Even though most reports about sex at the Olympics focus on inter-Olympian sex, Olympians themselves are understood as consumers of sex tourism. Tabloid media responses to Jamaican sprinter Usain Bolt's reportedly sexual encounter with Jady Duarte, a Brazilian woman, during the Olympics demonstrate assumptions that sexual contact between foreigners and Brazilian women is paid. Bolt, who was reportedly in a relationship with his Jamaican girlfriend Kasi Bennett at the time, was caught up in a media scandal after photos

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<sup>22</sup> Jason Diamond, “Rio Olympics: How Much Sex Are Athletes Actually Having?” *Rolling Stone*, August 10, 2016

that Jady Duarte purportedly shared on Whatsapp of herself and Bolt in bed became public. Most articles describe Duarte as a student, but some reports, mostly disseminated through social media outlets such as Twitter, described Duarte as an “escort” and “hooker”<sup>23</sup>. *Globo*, a powerful and widely read conservative tabloid paper based in Rio, reported claims by Duarte that Bolt did not pay her. Articles published by UK tabloid *Daily Mail* included information about Duarte's late husband<sup>24</sup>, a “bloodthirsty drug lord” who referred to himself as “the Lord of War” and the “terror of policemen.” The choice of tabloid publications to sensationalize and emphasize Duarte's husband's violence links Duarte to hustler economies in Brazil. This link is intended to frame Duarte as a sex worker and underscore Rio's distance from the Global North by representing Brazil as both economically and socially underdeveloped. The choice that such publications made to emphasize that Bolt was in a relationship at the time of his liaison echoes the warning that “What happens in Rio, doesn't always stay in Rio.” The problem with Bolt's sexual encounter is not necessarily that it happened, but that he was exposed.

Anxieties reflected in the media about sexual contact between Olympians, tourists, and (Afro-)Brazilians (both sex workers and non-sex workers) are exacerbated given the outbreak of Zika in Brazil in 2015 and the link made between microcephaly and the virus. Such anxieties target and construct sex

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<sup>23</sup>Nicolas DiDomizio, “People are freaking out over these selfies of Usain Bolt cuddling with Rio student,” *Mic*, August 22, 2016. Accessed December 7, 2016. <https://mic.com/articles/152213/people-are-freaking-out-over-these-selfies-of-usain-bolt-cuddling-with-rio-student#.Y6LqJPvA>.

<sup>24</sup> Matt Roper, “Revealed: Brazilian girl, 20, who spent night with Usain Bolt is the widow of bloodthirsty drug lord,” *Daily Mail*, August 22, 2016. Accessed December 15, 2016. <http://www.dailymail.co.uk/news/article-3752993/Brazilian-girl-20-dying-shame-spending-night-Usain-Bolt-widow-bloodthirsty-drug-lord-called-Din-Terror-died-shootout-cops.html>.



workers as vectors of disease. The same E! Online article<sup>25</sup> that warns that “What happens in Rio, doesn't always stay in Rio” reassures readers that “athletes are protected and careful because the condom stock is endless. They are extra careful this year because of Zika.” A Washington Post<sup>26</sup> article explains that the condoms “can also protect against the Zika virus, which ... has [been] shown to cause birth defects in fetuses.” Anxiety about the proliferation of Zika and microcephaly is directed at sex workers. Consider the tabloid article “EXCLUSIVE - 'I want to win Olympic gold for sex': Rio escort wants to use Games to find a boyfriend 'just like Julia Roberts in *Pretty Woman*'“, which has accumulated almost 500 comments. Published two days before the Olympics, the piece by David Williams profiles a sex worker who discusses her aspirations and views on sex work as a mode of labor that provides access to transnational and economic mobility.

Williams writes that when he asked her

about the warning of the mosquito-borne Zika virus being transmitted through sex, she was alarmingly dismissive insisting she thought 'the danger is overstated' and it was a 'condition of business' the client wears a condom. She claimed she has regular clients who are British, American, German and Italian with several bookings already for the period of the Olympics<sup>27</sup>.

The author's characterization of Juliana as “alarmingly dismissive” positions Juliana and other sex workers as vectors of disease responsible for the proper containment of the Zika virus. Commenters on Williams's article share his

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<sup>25</sup> Lily Harrison, “Olympic Village Sex Secrets Revealed.”

<sup>26</sup> Marissa Payne, “Rio Olympics providing a record number of condoms to athletes,” *The Washington Post*, July 19, 2016, accessed December 13, 2016. [https://www.washingtonpost.com/news/early-lead/wp/2016/07/19/rio-olympics-providing-a-record-number-of-condoms-to-athletes/?utm\\_term=.78d8aeffec7](https://www.washingtonpost.com/news/early-lead/wp/2016/07/19/rio-olympics-providing-a-record-number-of-condoms-to-athletes/?utm_term=.78d8aeffec7).

<sup>27</sup> David Williams, “I want to win Olympic gold for sex,” *Daily Mail*, August 3, 2016, accessed December 14, 2016. <http://www.dailymail.co.uk/news/article-3718345/I-want-win-Olympic-gold-sex-Rio-escort-wants-use-Games-boyfriend-just-like-Julia-Roberts-Pretty-Woman.html>.

perspective; one anonymous commenter from the town of Reading in England shared their outlook that “she is one of 12,000 sex workers targeting the games for punters<sup>28</sup>... oh dear, and when the games are over and these punters return to their respective countries that is when the worldwide Zika epidemic will begin.” “Punters” is British slang for sex workers’ clients. Williams and the commenter express anxiety about Zika and microcephaly as contagious materialities that might travel “back home” to the Global North, away from the irresponsible pleasure-seeking behavior sanctioned in the Global South. It is no coincidence that sex workers are positioned as responsible for “targeting punters”: such language invokes slavery’s myths of black women’s hypersexuality. It is also telling that the commenter registered concern with Zika becoming a “worldwide” epidemic, when at the time the comment was posted, Zika had already traveled to over 50 countries, most of them in the Global South. By constituting sex workers as vectors of disease responsible for Zika’s proliferation, sex tourists and would-be consumers of sex at the site of the Rio Olympics evade and reject responsibility for their roles in the globalizing spread of illness and disability.

Significantly, Gregory Mitchell, a scholar who worked with a research team at the Federal University of Rio de Janeiro's Observatório da Prostituição (Prostitution Observatory) found that despite sensational media reports about the supposed increase in both sex trafficking and services bought from sex workers – which are conflated as one and the same – that was predicted to take place at the 2014 World Cup in Rio, sex workers did not experience the anticipated influx in

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<sup>28</sup> British slang for sex workers’ clients.

customers.<sup>29</sup> After conducting ~2,000 hours worth of interviews with experienced sex workers who live in Rio, Mitchell and his team concluded that business declined at the World Cup. Citing sexual and physical abuses committed by police against sex workers that were carried out despite the legality of sex work, Mitchell explains that such violence was paradoxically justified as attempts to sanitize international perceptions of Brazil as a hypersexual site rife with underage sex and exploitation. Paul Amar's work in *The Security Archipelago* complicates both international assumptions about sex work at the Rio Olympics and Mitchell's findings. Amar takes up Operation Princess as a case study of the extent to which "Brazil's state and civil society are still in flux, as are the articulations of its securitization."<sup>30</sup> Amar shows that in the mid to late 2000s, the Brazilian government and the Rio police's moralistic and militarizing anti-trafficking campaigns fell apart against the backdrop of President Bush's and the United States Agency for International Development's (USAID) attack on Brazil's AIDS program. This program "empowered prostitutes to serve as health advocates and as legitimate agents of the government's public-health campaign."<sup>31</sup> As both the government and the public reacted to the inefficacy of the project's anti-trafficking mission and the extent to which it aligned with Global Northern imperialism, a new kind of "sex-worker empowerment model of

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<sup>29</sup> Gregory Mitchell, "The Olympics won't be a boon for sex workers, and not because of Zika virus," *Open Democracy*, August 4, 2016, accessed February 4, 2017, <https://www.opendemocracy.net/beyondslavery/gregory-mitchell/olympics-won-t-be-boon-for-sex-workers-and-not-because-of-zika-virus>.

<sup>30</sup> Paul Amar, *The security archipelago human-security states, sexuality politics, and the end of neoliberalism* (Durham, NC: Duke University Press, 2013), 119.

<sup>31</sup> Amar, *The security archipelago*, 194.

human-security governmentality” emerged.<sup>32</sup> Further research on Brazilian sex workers’ experiences during the Rio Olympics and with Brazilian governance should take up where Amar leaves off—in 2009, as mayor Eduardo Paes commits to reinstate Operation Princess.<sup>33</sup> For the purposes of this paper, Amar and Mitchell’s work is helpful because they challenge sensationalized, misleading representations of Rio’s sex tourist economies during mega events. Furthermore, they underscore the importance of the Olympics to Brazil’s emergence as a modern state: Amar argues that Brazil’s experiments with various modes of governance are part of a greater project of working to constitute itself both against and alongside Global Northern states.

In imaginaries external and internal to the country, Brazil is represented both as a “racial-sexual paradise” and as underdeveloped and savage. In other words, Brazil is represented to and by subjects privileged by global capitalism as an undesirable place to live, but a desirable place to visit. Drawing on Derek Gregory's reworking of Edward Said's “imaginative geographies”, Jasbir Puar writes in *Terrorist Assemblages*<sup>34</sup> that “imaginative geographies” are “imaginations given substance.” This concept is useful for theorizing the dynamics between the discursive and material within Brazil's tourist economies. Puar writes that “imaginative geographies are performative: they produce the effect that they name and describe.” In an enduring colonial imaginary, Brazil is discursively represented as an erotic, racial-sexual paradise, an imaginary made

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<sup>32</sup> Amar, *The security archipelago*, 198.

<sup>33</sup> Ibid.

<sup>34</sup> Jasbir Puar, *Terrorist Assemblages: Homonationalism in Queer Times* (United States: Duke University Press, 2007), 39.

material through transnational sex tourism. Puar emphasizes that “imaginative geographies endeavor to reconcile otherwise irreconcilable truths; they are mechanisms of, in Freudian terms, disavowal”<sup>35</sup>. In order for Global Northern discourse to represent Brazil as a desirable erotic paradise, such discourse must represent and understand the state as “primitive”, underdeveloped, and dangerous.

Extending Johannes Fabian’s discussion of anthropologists’ denial of coevalness<sup>36</sup> to the racialized Other here reveals that in Global Northern imaginaries, Brazil is backwards in time, primitive and out of sync with the Global North. Microcephaly, then, an intellectual and developmental disability—a developmental lag—is constituted by the Global North as natural evidence of Brazil’s economic, social, and material underdevelopment. Consider Anthony Schneck’s article “ALL YOUR OLYMPIC HEALTH CONCERNS, RANKED”<sup>37</sup>, which characterizes Brazil as impoverished and savage:

Not only is Brazil engulfed in a Zika outbreak, ... its health minister [was] replaced by someone with no health background who’s currently under investigation for corruption; and its economy in the dumps ... the water Olympians will be using is pathogen-filled sewage.

Schneck’s characterizations of Brazil warn and remind those privileged subjects who might attend the Olympics that Brazil is an improperly managed state. By pointing to the Zika outbreak, perceived governmental inadequacies, and water that is “pathogen-filled sewage”, Schneck highlights Brazil’s failure to properly manage illness and disease. Within the context that Schneck describes,

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<sup>35</sup> Puar, *Terrorist Assemblages*, 39.

<sup>36</sup> Johannes Fabian, *Time and the Other*, (New York: Columbia University Press, 1983), 32.

<sup>37</sup> Anthony Schneck, “All your Olympic Health Concerns, Ranked,” *Thrillist*, June 7, 2016, accessed December 10, 2016. <https://www.thrillist.com/health/nation/rio-olympics-2016-zika-dengue-stds-and-other-health-risks>

microcephaly seems natural to Brazil but foreign to the Global North. The Zika virus is threatening because it brings the supposed underdevelopment of the Brazilian state into closer proximity to the U.S. and Global North, and because Zika threatens to infect and disable the children of globe-trotting, privileged subjects.

In part by naturalizing the contemporary legacies of historical processes of colonization, slavery, and imperialism as conditions of poverty and disability inherent to the Global South, Global Northern states and their journalists work to maintain white supremacist ideologies and exploitative economic, social, and cultural relationships with Global Southern states. The discursive and material boundaries that the Global North establishes in order to distinguish itself from the Global South are unstable: moreover, the transgression of such boundaries is an essential part of imperial and colonial projects. Cast as backwards within Global Northern time, Brazil produces itself as and is understood as a space of sexual, thrilling, neo-colonial fantasy, a fantasy in which the Global North is literally invested in maintaining. The proliferation of the Zika virus and its corollary, microcephaly, disturb this neo-colonial fantasy, as the contagious materialities that might infect the Global North threaten Global Northern development and conceptions of white, able-bodied supremacy.

## CHAPTER TWO

Narratives of Contagion: Zika and Microcephaly as Threats to Global  
Northern State Security

Media, scientific, and public health responses to the Zika virus and microcephaly construct Zika as a potential tool of bioterrorists and microcephaly as a burdensome tragedy that can be quantified in Disability Adjusted Life Years. Zika and microcephaly are popularly imagined as racialized threats to Global Northern development and social and economic state security. In this chapter, I set the stage for my third and fourth chapters by reviewing some of the main themes that emerge out of articles about the virus. Namely, I explore the idea that the value of disabled lives can be measured and those metrics used in cost benefit analyses by Global Northern public health organizations. I also engage the construction of the virus as a terrorist threat. Towards the end of my chapter, I briefly analyze representations of mosquitoes as racialized terrorists, which I argue cite histories of anxiety surrounding blood mixing and miscegenation.

The Zika virus was first identified and named in 1947 when scientists discovered the virus in the Zika forest in Uganda, which was under surveillance for yellow fever<sup>38</sup>. Scientists located the Zika virus in a rhesus monkey and later recovered the virus from a *Aedes africanus* mosquito that they also caught in the forest. Despite its initial identification having taken place in Uganda's Zika forest, the narrative that the virus has come "out of Africa" haunts its representations.

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<sup>38</sup>Lecia Bushak, "A Brief History Of Zika Virus," *Medical Daily*, April 08, 2016, accessed April 19, 2017, <http://www.medicaldaily.com/zika-virus-outbreak-history-381132>.

Multiple media reports and scientific documents describe the virus's spread as emerging out of a homogeneous Africa. An ABC News timeline of the virus's spread marks 1947 as the year that Zika was "first discovered in primates in Zika forrest [sic] in Africa;"<sup>39</sup> a microbiology article simply declares that the virus "was first described in the African forests."<sup>40</sup> Both microcephaly and the virus's undesirability are underscored against the background of "monolithic Africa," which works to invoke colonial imaginaries of savage, underdeveloped spaces absent of unique, diverse cultures and in need of civilizing.

At the time of discovery and for the next 50+ years, "the Zika virus was compared to the likes of chikungunya and dengue fevers (both of which are transmitted through mosquitoes), though it appeared at the time that Zika was far milder."<sup>41</sup> Few human cases were identified, although mosquitoes carrying the virus were found in Tanzania, India, Indonesia, Malaysia, and Pakistan. Humans who contract ill from the virus generally experience a short period of illness and an accompanying rash. Prior to 2007, only 14 cases of Zika in humans had been documented: 2007 was a turning point for scientific understandings of the virus. The first large outbreak of the virus occurred on the Pacific Island of Yap in the Federated States of Micronesia. 73% of Yap residents ages three and older were reported to be infected with Zika, although there were no reported neurological

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<sup>39</sup> DR. SHAKIRA SANCHEZ-COLLINS and Gillian Mohny, "Zika Outbreak Timeline: How Our Understanding of the Disease Has Changed," *ABC News*, August 2, 2016, accessed February 12, 2017, <http://abcnews.go.com/Health/zika-outbreak-timeline-understanding-disease-changed/story?id=41066705>.

<sup>40</sup> Pettersson, John H-O., Vegard Eldholm, Stephen J. Seligman, Åke Lundkvist, Andrew K. Falconar, Michael W. Gaunt, Didier Musso et al. "How did Zika virus emerge in the Pacific Islands and Latin America?" *MBio* 7, no. 5 (2016): e01239-16.

<sup>41</sup> Bushak, "A Brief History of Zika Virus."



complications or deaths.<sup>42</sup> Kindhauser et al. write in a bulletin for the WHO that “Under-reporting may also be a reason for missing previous outbreaks of infection, due to the clinical similarities of (mild) illness associated with Zika, dengue, and chikungunya infections, and the frequent co-circulation of all three viruses.”<sup>43</sup> Noting the similarity of Zika virus symptoms to those incurred by dengue and chikungunya is important and allows us to critically consider particular responses to the Zika virus.

The first documented case of sexual transmission of the Zika virus occurred in 2008, when a United States scientist who had been working in Senegal returned home to Colorado infected with Zika.<sup>44</sup> Reports of Zika outbreaks in French Polynesia, Easter Island, the Cook Islands, and New Caledonia in 2013 and 2014 were followed by reports of Zika contraction and newborns with heightened numbers of neurological conditions flagged as disorders in Brazil beginning in March of 2015. Soon after, a high number of cases of Zika and microcephaly—infants born with heads deemed abnormally small according to international growth standards—were reported in Global Southern states.<sup>45</sup> On February 1, 2016 the WHO determined that the Zika infection’s association with microcephaly and other neurological disorders were a public health emergency of international concern.<sup>46</sup> Reports on the virus and its

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<sup>42</sup>Bushak, “A Brief History of Zika Virus.”

<sup>43</sup> Mary Kay Kindhauser et al., “Zika: the origin and spread of a mosquito-borne virus,” *Bulletin of the World Health Organization* 94, no. 9 (2016): , February 9, 2016, accessed 2017, doi:10.2471/blt.16.171082.

<sup>44</sup> Kindhauser et al., “Zika: the origin and spread of a mosquito-borne virus.”

<sup>45</sup>Ben Hirschler, “TIMELINE-Zika’s origin and global spread,” *Reuters*, December 20, 2016, accessed March 19, 2017, <http://www.reuters.com/article/health-zika-origin-idUSL2N1641YI>.

<sup>46</sup>Kindhauser et al., “Zika: the origin and spread of a mosquito-borne virus.”

connection to microcephaly initially cited the correlative relationship between Zika, microcephaly, and other neurological conditions. On April 13, 2016, the Centers for Disease Control determined that Zika definitively causes microcephaly.<sup>47</sup> Authors Costello et al. synthesize existing research on the syndrome, explaining that by isolating the Zika virus from the brains and cerebrospinal fluid of infants less than four weeks old and locating the virus within the placental tissue of the babies' mothers, researchers determined that the virus passed from mothers to children in utero. The virus functions by targeting what are essentially stem cells for the brain: because Zika inhibits neural development, the virus impacts brain development for fetuses in utero.<sup>48</sup>

Sins Invalid—a Bay Area-based performance project whose organizers build disability justice practices and nurture relationships with disabled queer and trans activists of color across the world—offer disability justice principals that are rich and critical interventions for rethinking the kinds of language used to describe microcephaly. Scientific and medical literatures define microcephaly as a birth disorder and/or defect characterized by abnormal brain development. Patty Berne, Sins Invalid's Co-Founder and Director, writes in collaboration with activists, scholars, and artists that “The fifth principle of Disability Justice is a newly articulated contribution to justice-based movements, *Recognizing Wholeness*, meaning that we value our people as they are, for who they are, and that people have inherent worth outside of commodity relations and capitalist

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<sup>47</sup>Media Relations, “CDC Concludes Zika Causes Microcephaly and Other Birth Defects,” *Centers for Disease Control and Prevention*, April 13, 2016, accessed March 19, 2017, <https://www.cdc.gov/media/releases/2016/s0413-zika-microcephaly.html>.

<sup>48</sup>Anthony Costello et al. “Defining the syndrome associated with congenital Zika virus infection.” *Bull World Health Organ* 94.6 (2016): 406-406A.

notions of productivity.”<sup>49</sup> The disability justice principle *Recognizing Wholeness* helps us consider the material conditions under which intellectually and developmentally disabled people are constituted as defective and abnormally underdeveloped (disabled people are constituted as such *against*, as I will argue later, a racist and unstable norm.) Exploitative labor relations and working conditions add to the disabled populations that do not labor for the state in ways legible under global capitalism. However, as I have already gestured at and will continue to demonstrate, disabled and racialized populations work to make proper subjectivity possible.

The translation of the scientific worry about the Zika virus through mainstream news media adds another layer of meaning and anxiety. For those with Internet access, information from the WHO describes how the Zika virus is transmitted through mosquito bites, intrauterinely, through sexual transmission, and through blood transfusions.<sup>50</sup> The *New York Times* article “Short Answers to Hard Questions About Zika Virus” poses and answers 19 questions, among which are

What areas is Zika likely to reach? How might Zika cause brain damage in infants? What is microcephaly? What countries should pregnant women avoid? How do I know if I’ve been infected? Is there a test? ... I’m a man and have returned from a place where the Zika virus is spreading. How long until I can be sure that I won’t infect a sexual partner?<sup>51</sup>

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<sup>49</sup> Patty Berne, “Disability Justice – a working draft,” *Sins Invalid*, June 10, 2015, accessed April 19, 2017, <http://sinsinvalid.org/blog/disability-justice-a-working-draft-by-patty-berne>.

<sup>50</sup> “Zika virus and potential complications,” *World Health Organization*, March 10, 2017, accessed February 19, 2017, <http://www.who.int/features/qa/zika/en/>.

<sup>51</sup> Donald G. McNeil Jr., Catherine Saint Louis, and Nicholas St. Fleur, “Short Answers to Hard Questions About Zika Virus,” *The New York Times*, January 17, 2016, accessed March 19, 2017, <https://www.nytimes.com/interactive/2016/health/what-is-zika-virus.html>.

These questions discursively and more immediately highlight the link between the Zika virus and microcephaly and focus anxieties on the proliferation of microcephaly. Configured as the virus's consequence, microcephaly is represented as undesirable, abject, and insidious. The quantity and type of questions about the virus address concerns women might have—both those already pregnant and who are considering becoming pregnant. These questions work to frame the accidental reproduction of babies with microcephaly as catastrophic:

Whether or not you have had symptoms, you should do everything you can to avoid infecting a woman who may be pregnant or is trying to become pregnant, because the consequences for the baby may be disastrous ... in one case in France, a man who never reported symptoms is believed to have infected his wife through sex.<sup>52</sup>

The Zika virus is constructed as threatening not only because of the consequences of the proliferation of disabled babies to global health. The virus is framed as doubly threatening because it can be both knowingly and unknowingly sexually transmitted. The WHO and CDC have released advisories on Zika prevention stating that pregnant women whose partners live in areas with active Zika virus transmission and those whose partners are returning from such areas should practice safe sex or abstain throughout their pregnancies. “The Emergence of Zika Virus as a Global Health Security Threat: A Review and a Consensus Statement of the INDUSEM Joint working Group” — a paper published in the *Journal of Global Infectious Disease* — characterizes newborn microcephaly as “the most

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<sup>52</sup>McNeil Jr. et al., “Short Answers to Hard Questions About Zika Virus.”

devastating and insidious complication associated with the ZIKV.”<sup>53</sup> “Insidious” can mean both “harmful but enticing” and “developing so gradually as to be well established before becoming apparent”:<sup>54</sup> while the latter definition best defines the Zika virus from an epidemiological perspective, the geographic contexts in which the virus is understood as having been transmitted play a central role in its representation.

Another *New York Times* article entitled “Microcephaly, Spotlighted by Zika Virus, Has Long Afflicted and Mystified” by Catherine Saint Louis describes microcephaly as “the striking deformity at the center of the [Zika] epidemic” and imagines the pain Brazilian mothers must feel as they respond to their children's’ disabilities:

The images pouring out of Brazil are haunting: struggling newborns with misshapen heads, cradled by mothers who desperately want to know whether their babies will ever walk or talk.<sup>55</sup>

Saint Louis forgoes geographic specificity, instead making a monolith of the nation with a singular representation. She argues that Brazilian children who fail to meet developmental “milestones” will disappoint and devastate.

Global health initiatives that intervene in the supposed underdevelopment of Global Southern states rely on and reify such ableist temporalities. In her work on crip time in *Feminist, Queer, Crip*, Alison Kafer cites Jack Halberstam's work

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<sup>53</sup>Sikka, Veronica, Vijay Kumar Chattu, Raaj K. Popli, Sagar C. Galwankar, Dhanashree Kelkar, Stanley G. Sawicki, Stanislaw P. Stawicki, and Thomas J. Papadimos. “The emergence of Zika virus as a global health security threat: a review and a consensus statement of the INDUSEM Joint Working Group (JWG).” *Journal of global infectious diseases* 8, no. 1 (2016): 3.

<sup>54</sup>“Insidious.” Merriam-Webster.com. Accessed April 19, 2017. <https://www.merriam-webster.com/dictionary/insidious>.

<sup>55</sup>Catherine Saint Louis, “Microcephaly, Spotlighted by Zika Virus, Has Long Afflicted and Mystified,” *The New York Times*, January 31, 2016, accessed February 19, 2017, <https://www.nytimes.com/2016/02/01/health/microcephaly-spotlighted-by-zika-virus-has-long-afflicted-and-mystified.html>.

on queer temporalities to show that normative time makes able-bodiedness and ideas about proper development seem natural. In fact, expectations about linear development cite norms that are unstable and impossible to fully and properly replicate.<sup>56</sup> Drawing on the ableist framings surrounding the case of Ashley X, a white disabled child whose parents determined that medical interventions on her improperly developing body were necessary in order to sync her physical appearance with her perceived mental underdevelopment, Kafer's work shows that developmental logics produce underdeveloped, disabled bodies as wrong, burdensome, and tragic.

Commenting on the CDC's April 13, 2016 definitive statement that Zika causes microcephaly, Director Tom Frieden asserted that "Zika virus is the cause of the tragic increase in microcephaly cases and other serious brain defects."<sup>57</sup> Both Dr. Mary T. Bassett, Health Commissioner for New York City, and Dr. Herminia Palacio, Deputy Mayor of Health and Human Services for New York City, stated in an article published on July 22, 2016 that the case of the first baby to be born with microcephaly in New York City is a reminder that the Zika virus has "tragic consequences."<sup>58</sup> These statements by public health officials corroborate Kafer's observation that "If disability is conceptualized as a terrible unending tragedy, then any future that includes disability can only be a future to

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<sup>56</sup> Alison Kafer, *Feminist, queer, crip* (Bloomington: Indiana University Press, 2013), 35.

<sup>57</sup> Brenda Goodman, "CDC: Zika Virus Definitely Causes Microcephaly," *WebMD*, April 13, 2016, accessed April 19, 2017, <http://www.webmd.com/a-to-z-guides/news/20160413/zika-causes-microcephaly#1>.

<sup>58</sup> Marc Santora, "A Grim First: New York City Reports Baby Born With a Zika-Related Defect," *The New York Times*, July 22, 2016, accessed February 19, 2017, <https://www.nytimes.com/2016/07/23/nyregion/zika-virus-baby-microcephaly-new-york.html>.

avoid.”<sup>59</sup> Saint Louis writes that should increasing numbers of babies be born with microcephaly,

it will significantly burden a generation of new parents for decades. Dr. Hannah M. Tully, a neurologist at Seattle Children’s Hospital, sees the pain regularly, particularly among expectant parents who have just been told that an ultrasound showed their child to be microcephalic: “a terrible situation with which to be confronted in a pregnancy,” she said.<sup>60</sup>

Dr. Tully’s assertion that a diagnosis of microcephaly is devastating demonstrates the foundational ableism of the United States medical—iindustrial complex and legitimizes Saint Louis’s framing of microcephaly as an “affliction.” Furthermore, Saint Louis’s invocation of babies with microcephaly as economic burdens cast disabled babies as drains on normative American families and as sources of national financial strain.

A common response to the Zika virus has been to configure the virus’s toll—imagined as a generation of disabled children across the world—as one with an immense economic and social cost. Measuring such a cost is essential to Global Northern state projects of intervening in Global Southern states that have been subject to colonization and enslavement. In the Washington Post’s “The cost of caring for a child with microcephaly for 53 years”, Barbara Altman itemizes that costs incurred in raising her son with microcephaly.<sup>61</sup> The total cost was ~\$4.6 million, the majority of which Medicaid covered: a link to an article entitled “Zika causes a unique syndrome of devastating birth defects” punctuates

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<sup>59</sup> Kafer, *Feminist, queer, crip*, 2.

<sup>60</sup> Saint Louis, “Microcephaly, Spotlighted by Zika Virus, Has Long Afflicted and Mystified.”

<sup>61</sup> Barbara Altman, “The cost of caring for a child with microcephaly for 53 years,” *The Washington Post*, November 28, 2016, , accessed February 19, 2017, [https://www.washingtonpost.com/national/health-science/the-cost-of-caring-for-a-child-with-microcephaly-for-53-years/2016/11/22/681a2bde-a5f4-11e6-ba59-a7d93165c6d4\\_story.html](https://www.washingtonpost.com/national/health-science/the-cost-of-caring-for-a-child-with-microcephaly-for-53-years/2016/11/22/681a2bde-a5f4-11e6-ba59-a7d93165c6d4_story.html).

Altman's calculations.<sup>62</sup> Kafer draws on texts spanning the early 1900s that came out of eugenic institutions to show that such sites justified their projects by warning “against the 'burden' of 'feeble-minded' children[:] ... disabled people were—and often are—figured as threats to futurity.”<sup>63</sup> Global Northern governments measure the financial drain that disability represents and makes material for developed nations by calculating the value of Global Southern disabled lives. *Zika Virus: Medical Countermeasure Development Challenges*, a review of medical countermeasures that address Zika infection and disease, finds that “As the burden of the current Zika associated disease profile falls on neonates and their parents, the disability-adjusted life year (DALYS) cost impact will be very high.”<sup>64</sup> DALYs center profitable futures: the metric calculates the loss of future years of health lost to disability and death. Nirmala Erevelles argues that because the World Bank and World Health Organization's use of DALYS to calculate the cost-effectiveness of health interventions necessitate quantifying populations' and individuals' productivities, the practice “constitutes disabled people as a liability to the state.”<sup>65</sup> *A Cost-Effectiveness Tool for Informing Policies on Zika Virus Control* estimates each microcephaly case in Latin America and the Caribbean at 29.95 DALYs and found that each case will cost

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<sup>62</sup> Altman, “The cost of caring for a child with microcephaly for 53 years.”

<sup>63</sup> Kafer, *Feminist, queer, crip*, 35.

<sup>64</sup> Malone, Robert W., Jane Homan, Michael V. Callahan, Jill Glasspool-Malone, Lambodhar Damodaran, Adriano De Bernardi Schneider, Rebecca Zimler et al. “Zika virus: medical countermeasure development challenges.” *PLoS Negl Trop Dis* 10, no. 3 (2016): e0004530.

<sup>65</sup> Nirmala Erevelles, *Disability and difference in global contexts: Enabling a transformative body politic* (Springer, 2011), 140.



\$91,102 in medical fees per lifetime.<sup>66</sup> Serving to devalue disabled lives under global capitalism, these calculations justify entrenched cultural attitudes about disability and mobilize measures to prevent the virus's proliferation. May Berenbaum's LA Times Op-Ed entitled "The Zika virus doesn't respect borders. It's time for immediate U.S. action" demands that the U.S. Congress invest in research on the Zika virus and mosquito vector control, arguing that it will cost the United States less in the long run to pre-emptively pay to prevent the virus's spread.<sup>67</sup> Arguing that the virus and "mosquitoes don't respect international borders," Berenbaum indicates that the States' financial and national interests align with securing the nation against the virus's future costs.

In *Biosecurity Dilemmas*, International Relations scholar and Professor at England's Southampton University Christian Enemark examines conflicts that emerge in regard to biosecurity strategies that states practice in response to "dreaded disease risk[s]."<sup>68</sup> He argues that "invoking 'security' in the context of a dreaded disease is not always advantageous" for multiple reasons; possible consequences include states' responses escalating tensions between nations, unnecessarily policing national borders, and funneling resources at the expense of other public health responses.<sup>69</sup> A queer and feminist analysis of Enemark's text problematizes Enemark's project, which maintains the legitimacy of Global

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<sup>66</sup> Alfaro-Murillo, Jorge A., Alyssa S. Parpia, Meagan C. Fitzpatrick, Jules A. Tamagnan, Jan Medlock, Martial L. Ndeffo-Mbah, Durland Fish et al. "A cost-effectiveness tool for informing policies on Zika virus control." *PLoS Negl Trop Dis* 10, no. 5 (2016): e0004743.

<sup>67</sup> May Berenbaum, "The Zika virus doesn't respect borders. It's time for immediate U.S. action," *LA Times*, accessed February 3, 2017, <http://www.latimes.com/opinion/op-ed/la-oe-0321-berenbaum-zika-funds-20160321-story.html>.

<sup>68</sup> Christian Enemark, *Biosecurity dilemmas: dreaded diseases, ethical responses, and the health of nations* (Washington, DC: Georgetown University Press, 2017), xviii.

<sup>69</sup> Enemark, *Biosecurity dilemmas: dreaded diseases, ethical responses, and the health of nations*, 180.

Northern states' power. What I am most interested in is Enemark's discussion of Zika in the book's conclusion, in which he asserts that the virus might come to pose a biosecurity dilemma. Enemark argues that in comparison to fatal diseases,

the Zika virus (which usually causes only mild illness in adults) appears to be feared for its potential to inflict deformity and disadvantage on the youngest of human beings. It is conceivable, then, that the freakish spectacle of babies' undersized heads and the associated stigma of diminished mental capacity could become the basis for robust and extraordinary anti-Zika efforts.<sup>70</sup>

Enemark's description of microcephaly (and other cognitive disabilities) as "deformity and disadvantage" suggests that babies with microcephaly are inferior because they do not conform to standardized measurements—their heads are "undersized"—and erases the pivotal role that structural violences play in harming disabled people. By characterizing babies with microcephaly as a "freakish spectacle," Enemark conjures up freak shows and circuses that displayed people with microcephaly as "exotic" human exhibits, and argues that these histories provide ample justification for securing the United States against Zika. I take up these histories further in my fourth chapter.

By characterizing the virus as one that "inflict[s]" microcephaly and other disabilities, Enemark imbues Zika with a kind of agency. In doing so, he aligns Zika with the forms of bioterrorism that his work engages. It is no coincidence that Max Brooks, a fellow at the Modern War Institute at West Point, which "studies recent and ongoing conflicts to prepare present and future leaders to win in a complex world,"<sup>71</sup> argues that "we need to see Zika not just as a public health

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<sup>70</sup> Enemark, *Biosecurity dilemmas: dreaded diseases, ethical responses, and the health of nations*, 180.

<sup>71</sup> "About," Modern War Institute, accessed March 19, 2017, <http://mwi.usma.edu/about-3/>.

emergency, but also as a live-fire exercise for a potential biological attack.”<sup>72</sup>

Grey Frandsen, former chief of staff of the State Department's Office for Stabilization Operations following 9/11, writes that it is imperative that the U.S. government address Zika in the same ways that the state addresses counterterrorism efforts, drawing parallels between what he sees as transnational and international terrorism's growth and the migration of disease in a globalized world.<sup>73</sup> By comparing al Qaeda and the Islamic State's “recruiting grounds” to mosquitoes' breeding grounds in the Americas and the Caribbean, Frandsen negatively animates mosquitoes as threats to U.S. national security and supremacy. Neel Ahuja observes in *Intimate Atmospheres* that mosquitoes constitute “a specter of decentralized terrorism” to which the US Department of Defense responds by conducting research that frames the mosquito as “anthropophilic parasite in need of quarantine or eradication” and “as a military model for ‘integrated pest management’ against figures of terror.”<sup>74</sup> By drawing parallels between mosquitoes and Islamic terrorist organizations, Frandsen momentarily racializes mosquitoes as Muslim Others. Capitalizing on dominant Islamophobic fears, Frandsen writes that “Disease-infected mosquitoes, like the fiercest of militants, are predatory and lethal.”<sup>75</sup> By positing that Zika-infected mosquitoes are “predatory and lethal,” he suggests that microcephaly and other

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<sup>72</sup> Max Brooks, “Max Brooks: Imagine the Zika virus as a terror weapon,” *NY Daily News*, May 27, 2016, accessed March 19, 2017, <http://www.nydailynews.com/opinion/max-brooks-imagine-zika-virus-terror-weapon-article-1.2651352>.

<sup>73</sup> Grey Frandsen, “COLUMN-We need to fight Zika the way governments fight terror,” *Reuters*, May 25, 2016, accessed March 10, 2017, <http://www.reuters.com/article/frandsen-zika-idUSL2N18M26Q>.

<sup>74</sup> N. Ahuja, “Intimate Atmospheres: Queer Theory in a Time of Extinctions,” *GLQ: A Journal of Lesbian and Gay Studies* 21, no. 2-3 (2015): 378-379, doi:10.1215/10642684-2843227.

<sup>75</sup> Frandsen, “COLUMN-We need to fight Zika the way governments fight terror.”

cognitive disabilities are conditions of life that should terrify U.S. citizens. Mosquitoes are capable of inflicting such terror: they transmit contamination and degeneracy, which is made material through the birth of babies with microcephaly. It is important to trace the historical geopolitical relations that generate anxieties around infants born with microcephaly resulting from congenital Zika syndrome. These fears reveal longstanding eugenic ideals and their unremitting relationship to ideas about national, economic, and global development. Specifically, they reveal the extent to which histories of racial miscegenation haunt responses to the contemporary transmission and spread of disability through blood.

Benigno Trigo writes in *Subjects of Crisis: Race and Gender as Disease in Latin America* that Doctor Francisco del Valle Atilés's 1880s scientific discourse on anemia in Puerto Rico reflects intersecting anxieties about miscegenation, racial purity, and disease. Atilés configured the mosquito as a proliferator of anemia and contaminator of blood. By arguing that Puerto Rico's swamps are origin sites of anemia and contaminated environments to which people of African descent are suited to live, Atilés suggested that like mosquitos, "the 'African race' in the colony had something to gain from keeping the environment unhealthy, and from polluting the 'mostly white' blood of the Puerto Rican peasant with its own 'inferior' blood."<sup>76</sup> I cite Trigo here to argue that the mosquito's transmission of illness and disease incite responses from power that frame insects as racialized predators because they move and transmit infections through blood. Such

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<sup>76</sup> Benigno Trigo, *Subjects of crisis: race and gender as disease in Latin America* (Hanover, NH: Wesleyan University Press, 2000), 81.

responses cite histories of anxiety about racial purity and blood contamination, which I bring up in my discussion of *mestizaje* and degeneration in my fourth chapter. In his work on the mapping of visual racial markers onto tobacco plants in the late nineteenth-century, Jih-Fei Cheng shows that viruses have been imagined as racialized infections.<sup>77</sup> Cheng complicates conceptions of race as solely visual by citing histories of “blood purity” in sixteenth-century Spain: colonial imaginaries have conceptualized race as both a visible and invisible signifier of difference and designated blood a site of potential contamination in need of regulation.

Frandsen’s essay describes Zika as a virus that “exploits cultural dynamics: rapid over-urbanization, a changing climate and increased levels of travel and economic activity among countries.”<sup>78</sup> Frandsen elides and displaces the ever-present historical processes and materialities of slavery and colonization that constitute modernity’s violences. The Zika virus is primarily transmitted by *Aedes* species mosquitoes, which also transmit dengue, yellow fever, and chikungunya.<sup>79</sup> Portuguese and Spanish slave ships transported enslaved West Africans across the Atlantic, bringing *aedes aegypti* mosquitoes with them to the Americas.<sup>80</sup> In other words, the ecological conditions under which Zika proliferates and *aedes* mosquitoes travel are constituted by colonial violence.

Frandsen dehistoricizes these conditions by writing that “The Zika virus exploded

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<sup>77</sup> Jih-Fei Cheng, ““El tabaco se ha mulato”: Globalizing Race, Viruses, and Scientific Observation in the Late Nineteenth Century.” *Catalyst: Feminism, Theory, Technoscience* 1, no. 1 (2015).

<sup>78</sup> Frandsen, “COLUMN-We need to fight Zika the way governments fight terror.”

<sup>79</sup> “Zika virus and potential complications.” *World Health Organization*, March 10, 2017, accessed February 19, 2017, <http://www.who.int/features/qa/zika/en/>.

<sup>80</sup> Powell, Jeffrey R., and Walter J. Tabachnick. “History of domestication and spread of *Aedes aegypti*-A Review.” *Memorias do Instituto Oswaldo Cruz* 108 (2013): 11-17

out of Brazilian slums at 21st-century speeds, and raced north into Central America and the Caribbean ... A full-blown outbreak in the United States looks imminent.”<sup>81</sup> In his imagination, Brazilian “slums” are incubators of bioterrorist technologies.

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<sup>81</sup> Frandsen, “COLUMN-We need to fight Zika the way governments fight terror.”

## CHAPTER THREE

(A)head of the Curve: Pseudoscience, Growth Standards, and Microcephaly as a  
Developmental Metric

In this chapter, I challenge and historicize the seemingly commonsensical functions of standardized growth measurements. Why does “Heads you win, tails you lose: measuring head circumference,” an article recently published in a leading pediatric neurology journal, assert that “The time has arrived for the measurement of head circumference to receive the same status and acceptance as obtaining height and weight measurements during routine well-child evaluations?”<sup>82</sup> I return to this question at the end of this chapter and posit that the dominant impulse towards standardization reflects the instability and inconsistency of scientific definitions and diagnoses of microcephaly. In order to make this argument, I show that distinguishing between science and pseudoscience perpetuates a false dichotomy that supports the myth that science is objective and non-racist. I show that developmental metrics, specifically the World Health Organization’s contemporary growth chart standards, produce as aspirational a new, normal baby that only some bourgeois subjects can ever afford to properly raise. The work of this chapter is to submit that white supremacist epistemologies constitute scientific methods and projects of international development.

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<sup>82</sup> Kenton R Holden, “Heads you win, tails you lose: measuring head circumference.” *Developmental Medicine & Child Neurology* 56, no. 8 (2014): 705-705.

Franz Joseph Gall, the German founder of phrenology, first posited in the early eighteenth-century that head circumference directly reflects brain size, which in turn correlates to intelligence and capacity.<sup>83</sup> After examining people with microcephaly who were incarcerated in an asylum in Vienna, Gall concluded that any person with a skull measuring less than fourteen inches in circumference at adulthood would unequivocally be unable to function typically. Arguing that typical adults' heads measured between twenty and twenty-two inches in circumference, Gall claimed in 1835 that adults with heads between eighteen and eighteen and a half inches in circumference lack self-discipline and the ability to function properly. French physiologist Felix Voisin, a co-founder and later the President of the Paris Phrenological Society, supported Gall's arguments. Voisin founded the treatment ward for "idiots" at the Bicêtre Hospital in Paris in 1836 where educators practiced "moral treatment" with the aim of socializing deviant and disabled youth.<sup>84</sup> Voisin claimed that

...in the lowest class of idiots, the skull's horizontal circumference just above the orbit varied from 11 to 13 inches. Individuals whose skulls were within the 14 to 17-inch horizontal circumference range showed little attention, but some rudimentary signs of intellect. People with 18- to 19-inch circumferences fared somewhat better, whereas the norm for a healthy, intelligent adult was found to be about 22 inches.<sup>85</sup>

Gall and Voisin's work on the correlation between skull circumference and intelligence has had longstanding consequences for scientific research questions,

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<sup>83</sup> Stephen Tomlinson, *Head masters: phrenology, secular education, and nineteenth-century social thought* (Tuscaloosa, Ala.: The University of Alabama Press, 2013), 70.

<sup>84</sup> James W. Trent, *Inventing the feeble mind: a history of intellectual disability in the United States* (New York, NY: Oxford University Press, 2017), 8.

<sup>85</sup> Stanley Finger, *Origins of neuroscience: a history of explorations into brain function* (Oxford: Oxford University Press, 2005), 304.



methods, and practices. George Combe, a phrenologist who studied with Gall, encouraged Samuel George Morton to begin collecting skulls.<sup>86</sup> In the mid to late nineteenth-century, Paul Broca, Francis Galton, and Cesare Lombroso endeavored to demonstrate that head circumference was predictive of morality and intelligence and key to establishing racial hierarchies.<sup>87</sup> Dominant historical accounts of phrenology insist that the discipline and its practices became recognized as a pseudoscience, declined in the 1850s, and presumably disappeared.<sup>88</sup> Due to the limitations of this thesis, I cannot fully outline and dispute such historical narratives about the decline of phrenology, craniometry, and anthropometry. However, my aim in this chapter is to show that the contemporary practice of measuring head circumference as a diagnostic tool and norming metric is rooted in and reflective of scientific histories that contemporary, dominant scientific discourse disavows as pseudoscience. I have chosen not to use the term “scientific racism” to describe such scientific histories in order to underscore the extent to which racism and science are co-constitutive.

In order to understand how the United Nations Educational, Scientific and Cultural Organization’ (UNESCO) postwar efforts to intervene into racism in fact further embedded racist practices within science by constituting the discipline as divorced from power and violence, I cite Franz Boas’s early 1900s challenge to the cephalic index which was at first widely ignored and then taken up beginning

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<sup>86</sup> Marvin Harris, *The rise of anthropological theory: a history of theories of culture* (Walnut Creek, CA: AltaMira Press, 2001), 99.

<sup>87</sup> Jennifer Michael Hecht, *The end of the soul: scientific modernity, atheism, and anthropology in France* (Columbia University Press.).

<sup>88</sup> Paul A. Erickson. “Phrenology and physical anthropology: the George Combe connection.” *Current Anthropology* 18, no. 1 (1977): 92-93.

in the 1950s. In the 1840s, under the influence of phrenology, Anders Retzius, a Swedish professor of anatomy, developed the cephalic index (calculated by dividing the breadth of a skull by length and multiplying the resulting number by one hundred) in order to racially distinguish between Swedes and Finns.<sup>89</sup> In the mid-1850s, Retzius elaborated two sets of classification — dolichocephaly vs. brachycephaly and prognathism vs. orthognathic — to differentiate between almost all Europeans by skull shape.<sup>90</sup> While taken up by European nationalists in the 1850s in order to differentiate amongst Europeans, the cephalic index became widely used in the post-Darwinian era as proof of the supposed immutability and biological reality of race.<sup>91</sup> Between 1909 and 1911, Franz Boas measured the heads of over 18,000 immigrant parents and their U.S.-born children and concluded from the results that the cephalic index varied greatly between the generations.<sup>92</sup> In *The Condemnation of Blackness: Race, Crime, and the Making of Modern Urban America*, Khalil Gibran Muhammad situates Boas's intervention within the context of white northern liberal reform in the late nineteenth-century and problematizes the extent to which Boas challenged white supremacy. In the 1910s, “Boas erased the color line and replaced it with a culture line ... in the sense that he still linked inferior behavior with black people.”<sup>93</sup> While Boas's research challenged long-held claims that race is biological and immutable, his

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<sup>89</sup> Bruce David Baum, *The rise and fall of the Caucasian race: a political history of racial identity* (New York: New York University Press, 2008), 131.

<sup>90</sup> Baum, *The rise and fall of the Caucasian race: a political history of racial identity*, 133.

<sup>91</sup> Baum, *The rise and fall of the Caucasian race: a political history of racial identity*, 131.

John P. Jackson and Nadine M. Weidman, *Race, racism, and science: social impact and interaction* (New Brunswick, NJ: Rutgers University Press, 2010), 74-75.

<sup>92</sup> David Hurst Thomas, *Skull wars: Kennewick Man, archaeology, and the battle for Native American identity* (New York: Basic Books, 2002), 104.

<sup>93</sup> Khalil Gibran Muhammad, *The condemnation of blackness: race, crime, and the making of modern urban America* (Cambridge, MA: Harvard University Press, 2011), 111.

inscription of perceived racial inferiority as cultural reaffirmed the racist social norms that produced racist science in the first place.

David H. Thomas argues in *Skull Wars* that it was only in the 1950s that the dominant scientific consensus aligned with Boas's contention that race is not a biological reality.<sup>94</sup> The story goes that during the postwar era, following the Holocaust,

The Nazi experiment provoked a revulsion against eugenics that effectively ended the movement. Geneticists dismissed eugenics as a pseudoscience, both for its exaggeration of the extent to which intelligence and personality were fixed by heredity and for its naïveté about the complex and mysterious ways in which many genes could interact to determine human traits.<sup>95</sup>

The effect of such a narrative is to frame all scientifically justified racism prior to the postwar period as pseudoscientific attempts and failures to capture and understand race. Such a distinction reifies the anti-racism of “true” science — the science that we supposedly have now. Jenny Reardon argues that UNESCO efforts to “position scientific research as an instrument of ‘rationality’ that could fight the [irrational] ‘ideology’ of race prejudice” did not repudiate nor abolish the racism embedded in science.<sup>96</sup> Reardon’s work details inter-disciplinary debates about how to scientifically define race. Many scientists involved in the “debate over what could distinguish a proper scientific approach to the study of race from misguided ideological approaches associated with the 'Negro problem' in the

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<sup>94</sup> Thomas, *Skull wars: Kennewick Man, archaeology, and the battle for Native American identity*, 105.

<sup>95</sup> Jim Holt, “Measure for Measure,” *The New Yorker*, February 18, 2015, accessed April 19, 2017, <http://www.newyorker.com/magazine/2005/01/24/measure-for-measure-5>.

<sup>96</sup> Jenny Reardon, *Race to the Finish: Identity and Governance in an Age of Genomics*. Princeton University Press, 2009, 25.

United States and the 'race problem' in Europe” agreed that race existed.<sup>97</sup> It was up to the sciences, then, to define and determine how race could be ascertained and measured: this problem was constructed as one that was designed to avoid, and could not possibly repeat, the faulty, oppressive science that constituted eugenic and Nazi Germany beliefs.<sup>98</sup>

This concept of pseudoscience is deployed to disavow the extent to which scientific methods, aims, and practices are constituted by white supremacist epistemologies. Specifically, in the aftermath of WWII, the attempts of UNESCO to intervene into racism paradoxically retooled racist scientific ideologies and approaches. The postwar UNESCO initiative to diagnose and address developmental challenges in the decolonizing Global South drew upon racist anthropometrics to institute a universalizing measure for individual, biological human development that supposedly reflected each country’s infrastructural conditions. In the *Right Kind of Revolution: Modernization and U.S. Foreign Policy from the Cold War to the Present*, Michael E. Lantham argues that in the postwar United States,

Modernization promised an altruistic solution to some of the Cold War’s most vexing problems, suggesting that the United States could promote democracy and alleviate poverty. It would not only contain the dangers of Communist subversion but also dramatically improve the lives of millions of people in Africa, Asia, the Middle East, and Latin America.”<sup>99</sup>

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<sup>97</sup> Reardon, *Race to the Finish*, 19.

<sup>98</sup> Reardon, *Race to the Finish*, 30.

<sup>99</sup>Michael E. Lantham, *The right kind of revolution: Modernization, development, and US foreign policy from the Cold War to the present*. Cornell University Press, 2011, 4.

In this context, the World Health Organization emerged as central to the modernizing project of quelling decolonizing revolutions in 1948.<sup>100</sup> Alongside the World Bank, the WHO began to standardize and invest in the improvement of health metrics designed to ascertain international developmental performance.<sup>101</sup>

In “The Material Life of Graphs,” Joseph Dumit and Marianne de Laet argue that growth charts work to standardize what it means to properly parent and develop children. Both the Centers of Disease Control and the World Health Organization adopted national growth charts in the late 1970s.<sup>102</sup> These charts, which by the 2000s functioned as a standard norming tool, were produced from the Fels Research Institute study. This study derived its data from “mainly formulafed, white middle-class infants in a limited geographic area of southwestern Ohio.”<sup>103</sup> Because these metrics were intended to be references for average baby sizes and growth but were extrapolated and used as definitive metrics of health and normality, these charts produced material consequences. Referencing the statistics based on this limited population, doctors and nurses began to recommend that “under-nourished” babies who fell into low weight percentiles on the chart switch to formula instead of breast milk.<sup>104</sup> Later research showed that babies who breastfeed grow more slowly towards the beginning of their development. In other words, baby growth charts that represented averages as proper measurements were key to a norming “process by which ‘a healthy

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<sup>100</sup> Lantham, *The right kind of revolution*, 30.

<sup>101</sup> Reardon, *Race to the Finish*, 30.

<sup>102</sup> Marianne De Laet and Joseph Dumit, “Curved to bodies: The material life of graphs.” *Routledge handbook of science, technology and society* (2014): 71-89.

<sup>103</sup> *Ibid.*

<sup>104</sup> *Ibid.*

baby' comes to be defined exclusively by measurement and its relation to statistical norms."<sup>105</sup>

For many medical officials, the most significant problem with averaging data about breastfed and formula-fed babies was that such calculations would render non-normative otherwise “normally” developing children.<sup>106</sup> The World Health Organization responded to critiques of the existing growth charts by carrying out the Multicentre Growth Reference Group Study. De Laet and Dumit’s analysis of the MGRS is that

The new WHO approach no longer considers growth standards as referring to existing babies, nor to group differences, nor to any sort of average; instead it aims to produce what it considers to be the ideal babies reared in the most ideal ways in the most ideal places so that the new standard growth chart is an *explicit* device for making value judgements.<sup>107</sup>

The MGRS worked to produce “healthy” and uniformly raised babies by collecting growth data from babies and young children who met and whose mothers met specific criteria. In acknowledgement of the multiple limitations of the data from the Fels study, the MGRS purports to value and incorporate diverse populations in its research. The WHO’s informational webpage on the study deceptively explains the methodology of the study: “The MGRS collected primary growth data and related information from approximately 8500 children from widely different ethnic backgrounds and cultural settings (Brazil, Ghana, India, Norway, Oman and the USA).”<sup>108</sup> However, the study selected participants

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<sup>105</sup> Ibid.

<sup>106</sup> Ibid.

<sup>107</sup> Ibid.

<sup>108</sup> World Health Organization. “The WHO Multicentre Growth Reference Study (MGRS).” *Child Growth Standard16* (2009).

based on a strict set of conditions thought to be optimal for child development, including “breast-feeding, being well-off, having educated [and non-smoking] mothers, living in urban areas, at low altitude, and having access to lactation consultants.”<sup>109</sup> Participants were excluded if the socio-economic conditions under which they lived were considered impediments to growth. “Children with disease” were excluded from participation in the study.<sup>110</sup> The main reason that potential participants of the longitudinal aspect of the study—which charted the growth of the same participants until they were 24 months old—were deemed ineligible in Brazil, Ghana, India, and Oman was that they did not satisfy the study’s socioeconomic criteria. The socio-economic conditions that the longitudinal study took into consideration were whether or not the family made the equivalent of ~\$60,000/year USD and had access to piped water, a flush toilet, refrigerator, a gas/electric cooker, telephone, and car.<sup>111</sup> These criteria worked to standardize child rearing practices and development by producing both the parents and children of privileged subjects as desirable citizens capable of facilitating and performing normative development.

Dumit and de Laet argue that “As baby-rearing practices develop, the very notion of what is a ‘healthy baby’ alters, and when new standards are implemented to create better normal babies, they create the new type of the abnormal baby, too.”<sup>112</sup> That the MGRS idealizes such conditions works to

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<sup>109</sup> De Laet and Dumit, “Curved to bodies: The material life of graphs.”

<sup>110</sup> Mercedes Onis. “Enrolment and baseline characteristics in the WHO Multicentre Growth Reference Study.” *Acta Paediatrica* 95, no. S450 (2006): 7-15.

<sup>111</sup> *Ibid.*, 11.

<sup>112</sup> De Laet and Dumit, “Curved to bodies: The material life of graphs.”

produce privileged, exceptional, and highly regulated child rearing practices as natural and normal. The WHO's FAQ on the MGRS obscures the norming methodologies embedded in the production of the study's anthropometric standards, stating that "The standards describe normal child growth from birth to 5 years under optimal environmental conditions and can be applied to all children everywhere, regardless of ethnicity, socioeconomic status and type of feeding."<sup>113</sup> However, these standards are inherently limited and unstable in that they reflect an aspirational norm and go beyond averaging to design new, "normal babies." Because the exploitation and labor of certain, marked populations make bourgeois conditions of life and child rearing possible, the WHO's MGRS works to restrict access to the practices and resources deemed "optimal" for child development. In other words, the MGRS is set up so that the majority of the world's population can never properly develop.

It is against this backdrop of ideal child rearing practices, which are deployed internationally to serve Global Northern state hegemony, that I submit that microcephaly is an unstable diagnosis intended to signal underdevelopment. The standard growth charts that allow for the contemporary diagnosis of microcephaly idealize certain kinds of inaccessible developmental practices. Currently, the WHO asserts that microcephaly should be diagnosed by measuring head circumference 24 hours after birth and comparing the result to WHO growth standards.<sup>114</sup> However, microcephaly has been described and understood in a

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<sup>113</sup> "Q. Will the standards be applicable to all children?," *WHO*, accessed April 19, 2017, <http://www.who.int/childgrowth/faqs/applicable/en/>.

<sup>114</sup> "Microcephaly," *World Health Organization*, 2016, accessed April 21, 2017, <http://www.who.int/mediacentre/factsheets/microcephaly/en/>.



variety of ways that have changed over time. A 1965 article on infant head circumference from the University of Sheffield's Department of Child Health in England, however, explains that "A small head is not strictly synonymous with microcephaly. It may, for instance, be a familial feature. A true microcephalic head is characterized not only by the small head circumference, but by its shape, and in particular by the excessive tapering off toward the vertex."<sup>115</sup> That this description emphasizes that head size is not always indicative of microcephaly reflects a series of decisions about standardizing head size that have led up to contemporary diagnoses of microcephaly. Contemporary medical and scientific literature also reflect ambivalence as to the extent that standard measurements of head circumference can adequately identify microcephaly. A 2015 article from a Canadian journal recommends that serial head circumference measurements be regularly documented during pediatric visits. This same article, however, notes that "One conundrum in plotting HC is which growth chart to use" and criticizes the WHO charts because "the mean occipital-frontal circumference for children in industrialized countries is larger than the standard values provided by WHO."<sup>116</sup> The *Fetal Medicine: Basic Science and Clinical Practice* (2008) entry on microcephaly states that "The exact definition of microcephaly during the prenatal period is a matter of controversy since there is no consensus regarding the definition of abnormally small HC."<sup>117</sup> Medical experts move towards more

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<sup>115</sup> Illingworth, R. S., and W. Lutz. "Head circumference of infants related to body weight." *Archives of disease in childhood* 40, no. 214 (1965): 672.

<sup>116</sup> Harris, Susan R. "Measuring head circumference Update on infant microcephaly." *Canadian Family Physician* 61, no. 8 (2015): 680-684.

<sup>117</sup> Rodeck, Charles H., and Martin J. Whittle. *Fetal medicine: basic science and clinical practice*. Elsevier Health Sciences, 2008, 294.

explicitly standardizing head circumference measurements even as they admit that such quantifications are up for debate. What the contemporary project of improving upon standardized growth measurements deemed obsolete reveals is that the project of producing new metrics of normality and new modes of child development is inherently unstable. Efforts to get away from long histories of racism and colonialism that frame standardization as an objective scientific practice reify the racist ideologies that permeate dominant scientific epistemologies.

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## CHAPTER FOUR

Primitive Capacities: Freak Shows, Colonial Violence, and the Limits of  
Citizenship

In this chapter, I argue that histories of freak shows, social and life sciences, and psychoanalysis constitute microcephaly as a visible marker of a person's inability to reason and exert self-control. Dominant psychoanalytic frames produce primitive Others deemed incapable of reason and sexual regulation as essential to the psychic development of civilized subjects. People with microcephaly are constituted as such uncivilized Others and cast outside of Global Northern conceptions of proper citizenship. The proliferation of babies with microcephaly must be resisted by Global Northern states that aim to secure external and internal borders against racialized threats to the health and regulatory capacity of their national bodies. Histories of measuring bodily difference, specifically cranial measurements associated with intelligence and capacity, are key to unpacking colonial conceptions of subjectivity.

Histories of skull measurements are key to psychoanalytic claims of racial psychic difference. Samuel George Morton, the Philadelphia scientist and doctor who posited that races were distinctly created—an argument for polygenesis—worked from 1830 to 1851 to prove his theory.<sup>118</sup> Morton argued that his data showed that brain size, intelligence, and behavior are all linked.<sup>119</sup> He claimed

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<sup>118</sup> Thomas, *Skull wars: Kennewick Man, archaeology, and the battle for Native American identity*, 34-35.

<sup>119</sup> Thomas, *Skull wars: Kennewick Man, archaeology, and the battle for Native American identity*, 41.

that black people's brains were 78 cubic inches, "Caucasian" brains were 87 cubic inches, and Native American's brains were 82 cubic inches.<sup>120</sup> Claiming in an 1842 speech at the Boston Society of Natural History that Native people were impossible to civilize and destined to die out, Morton cited inferior brain structure, which he argued lacked indications that Native people could succeed at arts and sciences. He also read data from skulls of black people as indicating that black people were biologically destined for enslavement.<sup>121</sup> Celia Brickman's *Aboriginal Populations In The Mind* cites histories of craniometry as key to formulations of psychoanalytic racial and sexual difference, arguing that

Cranial measurements purported to show that, because of limited brain capacity, the mental development of the uncivilized was limited to the level just prior to that of the adolescence of civilized peoples: savages would never be able to pass into adulthood.<sup>122</sup>

Brickman reveals that histories of anthropometry and psychoanalysis work together to foreclose indigenous people from civilized society by citing primitive cognitive capacity. Morton's aim was to find biological justifications for both the genocide of indigenous people and the preservation of black people as fungible property.<sup>123</sup> Morton's outlook on the question of black emancipation was clear: the brain sizes and corresponding mental capacities of black people deemed them fit only for slavery.<sup>124</sup>

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<sup>120</sup> Thomas, *Skull wars: Kennewick Man, archaeology, and the battle for Native American identity*, 40.

<sup>121</sup> Thomas, *Skull wars: Kennewick Man, archaeology, and the battle for Native American identity*, 41-42.

<sup>122</sup> Celia Brickman, *Aboriginal populations in the mind: Race and primitivity in psychoanalysis*. Columbia University Press, 2003: 46.

<sup>123</sup> Tiffany King. "Labor's aphasia: Toward antiblackness as constitutive to settler colonialism." *Decolonization: Indigeneity, Education & Society* (2014).

<sup>124</sup> Thomas, *Skull wars: Kennewick Man, archaeology, and the battle for Native American identity*, 42.

Muhammad charts the professionalization of social sciences in the late nineteenth-century, which heralded the turn to statistics as objective proof of black inferiority and inherent criminality.<sup>125</sup> Muhammad argues that

In this emerging social Darwinist context, all evidence of domination in society by one group over another—as explained by Herbert Spencer, the most influential founder of American sociology and creator of the term “survival of the fittest”—came to be seen as a natural consequence of that group’s inherent superiority.<sup>126</sup>

Social scientists read the 1890 census, which marked 25 years following emancipation and was regarded as a temporal milestone that could accurately reflect black people’s assimilation into society, as indisputable evidence of black criminality and primitivity. Of course, such statistics on crime and disease were already interpreted within anti-black frames that anticipate black failure and construct black inferiority as foundational to colonial modernity. Nathaniel Shaler, a Harvard scientist and writer on race, believed that black freedom was impossible due to black people's inherent savagery and sexual and moral underdevelopment.<sup>127</sup> In 1884, Shaler wrote that following Reconstruction, “the black race [had] fallen through its freedom to a state that is but savagery with a little veneer of European customs.”<sup>128</sup> Like Spencer and Morton, Shaler regarded the figure of the primitive both as antithetical and foundational to the formulation of civilized, European man.

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<sup>125</sup> Muhammad, *The condemnation of blackness: race, crime, and the making of modern urban America*, 8.

<sup>126</sup> *Ibid.*, 24.

<sup>127</sup> *Ibid.*, 17-18.

<sup>128</sup> *Ibid.*, 17.

Victorian and Progressive Era freak shows in the United States and Britain produced microcephaly within anti-black, colonial frames. In his book *Freak Show: Presenting Human Oddities for Amusement and Profit*, Robert Bogdan argues that showmen staged people with microcephaly — and people who were read or understood as having microcephaly — in freak shows as savage and exotic. These modes capitalized on the Victorian period’s dominant scientific discourse, which was concerned with theorizing and solidifying racial taxonomies. Reputable scientists’ interests in nineteenth-century freak shows in the Global North legitimized the fictive framings that P.T. Barnum and other businessmen, showmen, and managers used to market and display their human exhibits.<sup>129</sup> People with microcephaly were framed as indigenous members of extinct races: significantly, few of the people with microcephaly who were exhibited in circuses and freak shows were presented as originating from Global Northern states.<sup>130</sup>

British ethnologists were concerned with categorizing and identifying primitive subjects who were proof of indigenous civilizational decline. Maximo and Bartola, “The Last of the Ancient Aztecs of Mexico,” were a famous human exhibit who were kidnapped, taken from San Miguel, El Salvador, and first exhibited in 1849 as “pureblooded” Aztecs.<sup>131</sup> Colonial, racialized ableism marked their improper bodies as queer: their heads were deemed microcephalic,

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<sup>129</sup> Robert Bogdan, *Freak show: presenting human oddities for amusement and profit* (Chicago: Univ. of Chicago Press, 2009), 26-27.

<sup>130</sup> *Ibid*, 112.

<sup>131</sup> *Ibid*, 127.

their stature too short, and their noses too large.<sup>132</sup> On their tours, their manager sold a forty-eight-page pamphlet detailing their discovery that borrowed from John Lloyd Stephens's *Incidents of Travel in Central America, Chiapas, and Yucatan*.<sup>133</sup> During his colonial expeditions, Stephens dug up skulls from indigenous communities' graveyards, which he stole and brought to Morton for measurement.<sup>134</sup> Stephen was the inspiration for the figure of Pedro Velásquez—the fictional author of the pamphlet—who found the children and saved them from inevitable extinction should they have stayed in “the long-lost ‘Idolatrous City of Iximaya.’”<sup>135</sup> The pamphlet claimed that Maximo and Bartola were members of an ancient race made degenerate by intermarriage, which produced the pair as sexually deviant.<sup>136</sup> Maximo and Bartola's origin story as representative of civilizational decline attracted the attention of the public as well as scientists in Boston, where they were first displayed.<sup>137</sup> J.M. Morris introduced the human exhibits to the Boston society of Natural History, members of the Senate and House of Representative, President Fillmore, scientists, doctors, and governmental representatives.<sup>138</sup> In 1853, Maximo and Bartola were exhibited in London for the first time, in both public spaces and at esteemed sites such as the Ethnological Society and Buckingham Palace.<sup>139</sup> Nadja Durbach argues that the exhibit served a particular purpose in Britain. Unlike in the United States, “whose

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<sup>132</sup> Nadja Durbach, *Spectacle of deformity freak shows and modern British culture* (Berkeley: University of California Press, 2010), 119.

<sup>133</sup> *Ibid.*, 123.

<sup>134</sup> Kutzinski, Vera M. “Surveying the American Tropics: A Literary Geography from New York to Rio.” *New West Indian Guide* 89, no. 1 (2015): 158-160.

<sup>135</sup> *Ibid.*, 116.

<sup>136</sup> *Ibid.*, 116.

<sup>137</sup> Bogdan, *Freak show: presenting human oddities for amusement and profit*, 129.

<sup>138</sup> *Ibid.*, 129-130.

<sup>139</sup> *Ibid.*, 130.

population was more familiar with the peoples on its southern border, having just fought them in the 1846-48 Mexican-American War”, the British were expanding their colonial purview.<sup>140</sup> Maximo and Bartola were objects of intrigue and fascination, and British scholars debated the source of their degeneracy in order to confirm and reify their own racial and civilizational modernity.<sup>141</sup>

However in tension characterizations of Maximo and Bartola’s “true” racial makeup were, popular and scientific British discourses maintained colonial, genocidal logics about the inevitable extinction of indigenous people. In “Exhibiting Degeneracy: The Aztec Children and the Ruins of Race,” Robert D. Aguirre argues Maximo and Bartola incited debate about racial authenticity. Ethnologists questioned whether or not the pair were truly “pureblooded” Aztecs, degenerating in accordance with settler-colonial logics that deemed indigenous extinction inevitable, or if they were mixed, and therefore made degenerate by miscegenation. Aguirre writes that

[British] Ethnologists marshalled what evidence they could find — from specific information about the children themselves to general accounts of Latin American racial mixture — to discredit the children's supposed racial purity and to put them in their place as nothing more than garden variety *mestizos*, offspring of once great but now hopelessly mixed races ... because polygenist racial theory also held that the children of mixed race parents were unlikely to be prolific — the crossing of races produces infertile young — this “solution” returns to the theme of inevitable, if gradual, extinction.<sup>142</sup>

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<sup>140</sup> Durbach, *Spectacle of deformity freak shows and modern British culture*, 122.

<sup>141</sup> *Ibid*, 127.

<sup>142</sup> Robert D. Aguirre, “Exhibiting Degeneracy: The Aztec Children and the Ruins of Race,” *Victorian Review* 29, no. 2 (Winter 2003): 56, doi:10.1353/vcr.2003.0021.



Ethnologists asserted that the “Aztec” children were incapable of assimilation, citing their supposed inability to walk erectly, dress, and feed themselves as proof that they could not survive civilized modernity.<sup>143</sup> Some spectators refuted this, claiming that Maximo and Bartola were performing civilized norms: of course, this narrative reifies the colonial suppression and education of savagery and idiocy.<sup>144</sup>

In the United States, showmen extensively copied Maximo and Bartola’s framings, from their costuming to their stories. Schlitzie, a well-known performer with microcephaly who appeared in *Freaks*, a 1932 movie featuring freak show performers and human exhibits, was presented as “Maggie, the Last of the Aztecs” and in the early 1900s the Ringling Circus displayed “Tik Tak, the Aztec Pinhead.” Bogdan lists multiple examples of people with microcephaly who were advertised and displayed under headlines that claimed that they were indigenous Aztecs.<sup>145</sup> Tom and Hettie, siblings with microcephaly from Ohio, were exhibited as “The Wild Australian Children” starting in 1860, and were popular for over 30 years.<sup>146</sup> Marketed as “members of a near-extinct cannibal tribe from the interior of Australia,” pamphlets sold at their appearances

emphasized that ‘phrenologists and other scientific men’ were of the opinion that they were ‘neither idiot, *lusus naturae*, nor any other abortion of humanity, but belonged to a distinct race hitherto unknown to civilization.’<sup>147</sup>

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<sup>143</sup>Durbach, *Spectacle of deformity freak shows and modern British culture*, 130.

<sup>144</sup> *Ibid.*, 129.

<sup>145</sup> Bogdan, *Freak show: presenting human oddities for amusement and profit*, 131.

<sup>146</sup> *Ibid.*, 120.

<sup>147</sup> *Ibid.*, 119-120.

Scientific discourses in the mid-nineteenth-century were invested in questions of bodily—specifically cranial—measurements, and legitimized the exotic origin stories that accompanied the display of people with microcephaly. Diagnosing microcephaly through medical frames eventually became key to the process of establishing racial taxonomies and solidifying theories of human development. By fashioning people with microcephaly as members of declining races, showmen took advantage of and played into colonial ideologies concerned with the discovery, classification, and civilization of savage Others.

In the 1930s, a white man and woman from the United States were displayed in freak shows “as albinos from a head-binding tribe in Africa.”<sup>148</sup> Significantly, the pair’s aberrant head size registered as abnormal enough to justify their representation as black and primitive, which called into question and destabilized their whiteness. Karl Vogt, popularly referred to as “the Darwin of Germany,” examined Bartola and Maximo and concluded in *About the Microcephalics or Ape-People* (1867) that

microcephalism was a 'partial atavistic' reappearance of an earlier state of human evolution caused by an arrest in the development of the fetus’s skull resulting in the formation of an ape-like cranium and brain, which, according to Vogt, explained the limited capacities of the microcephalics.<sup>149</sup>

Vogt posited that people with microcephaly have the same intellectual capacity as apes. It is not incidental that Vogt argued in 1864 that “Negro brains” developed in ways similar to ape brains and appeared like those of white children and women in their underdevelopment, nor that he claimed that the “whole race has,

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<sup>148</sup> Ibid, 122.

<sup>149</sup> Rosemarie Garland Thomson, *Freakery: cultural spectacles of the extraordinary body* (New York: New York University Press, 2008), 167.

neither in the past nor in the present, performed anything tending to the progress of humanity or worthy of preservation.”<sup>150</sup> Vogt’s staging of both people with microcephaly and black people as biologically and culturally more ape-like than human evidence the extent to which microcephaly is marked as racial difference.

Brickman posits that late nineteenth-century anthropological and scientific discourse informed Sigmund Freud's racist and colonial elaborations of subjectivity. Herbert Spencer formulated evolutionary development as civilized man’s ability repress and control his impulses; Sigmund Freud, the founder of psychoanalysis, maintained that primitive man is uninhibited and incapable of internalizing external prohibitions.<sup>151</sup> The figure of the primitive is central, not tangential, to formulations of psychological development. Brickman writes that

Freud’s rendering of the unconscious as the timeless and primitive abode of “aboriginal populations” mimicked functional anthropology’s representation of primitive peoples as outside, and prior to, history ... the temporal orientation of psychoanalysis is not simply one element among many but is the central organizing framework of the psychoanalytic enterprise.”<sup>152</sup>

Managers of circuses and freak shows cast people with microcephaly as savage, forever outside of Western, anthropological time: the latter were and continue to be constituted as incapable of internalization and rational thought. The work of nineteenth-century science was to demonstrate that bodies could be categorized as normal or abnormal and that such measurements could show whether or not a person could be a civilized subject.

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<sup>150</sup> Ethnological Society of London. *Transactions of the Ethnological Society of London*. Ethnological Society, 1863, 25-26.

<sup>151</sup> Brickman, *Aboriginal populations in the mind*, 95.

<sup>152</sup> *Ibid*, 142.

Franz Gall claimed in 1835 that adults with heads between eighteen and eighteen and a half inches in circumference demonstrate “a judgement rather fallible, an extreme difficulty in discerning the relation of cause and effect, a want of self-control, and frequently, what is a happy circumstance, few desires.”<sup>153</sup> Gall’s claims position self-regulation as aspirational and construct head circumference as a metric indicative of the extent to which a person will adhere to racialized developmental norms. That Gall considered the supposedly limited desires expressed by people with head sizes deemed abnormally small “a happy circumstance” reflects cultural anxieties about the sexual appetites and behaviors of people with intellectual and developmental disabilities.

These histories reveal the entrenched ableism and racism that undergird efforts to prevent the Zika virus and microcephaly from entering Global Northern states. Microcephaly—racialized proof of third world underdevelopment—threatens to disrupt the state’s ability to successfully manage and regulate its body politic. In other words, people with microcephaly are constituted as incapable of exercising the kinds of sexual self-regulation and rational choice deemed necessary for participation as Global Northern citizens. Stacy Simpican’s work on John Locke’s social contract theory reveals the foundational subjugation of the figures of the Savage and Idiot as key to what she rearticulates as a “capacity contract.”<sup>154</sup> Arguing that the racist, colonial capacity contract “bases political membership on a threshold level of capacity and excludes anyone who falls

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<sup>153</sup> Tomlinson, *Head masters: phrenology, secular education, and nineteenth-century social thought*, 70.

<sup>154</sup> Stacy Clifford Simpican, *The capacity contract: intellectual disability and the question of citizenship* (Minneapolis: Univ. of Minnesota Press, 2015), 4.

below,” Simplican shows that the supposed equality of the contract only extends to those subjects bestowed with personhood: in other words, those who can cite cognitive norms.<sup>155</sup> Liberal democratic anxiety, then, hinges on the irrational, defective, and/or absent reasoning of those with cognitive disabilities, and the ideal citizen subject is produced against racialized and disabled Others.

The proper citizen’s ability to reason is inextricably connected to his capacity to regulate and form proper desire. David Eng argues that “Alongside the argument that the primitive lacks mental complexity and an adequate moral framework is this more pernicious, yet fundamental, conflation of sexual perversions with racial difference, a constitutive crossing motivated precisely by the absence of unconscious regulation.”<sup>156</sup> What particularly attending to microcephaly as a racialized metric of development reveals is that the figure of the primitive is constructed as incapable of unconscious regulation and thought to identifiable by schemes that categorize and measure physical difference. Cranial capacities that are deemed abnormally small function as “proof” that intellectually disabled and/or black people are excessively sexual and lack control.<sup>157</sup> In *Already Doing It: Intellectual Disability and Sexual Agency*, Michael Gill analyzes representations of “idiocy” and sexuality. Taking up Lars von Trier’s film *The Idiots* (1998), which depicts a group of anti-bourgeois adults who choose to behave “like idiots” in order to disrupt and liberate themselves from dominant

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<sup>155</sup> Simplican, *The capacity contract: intellectual disability and the question of citizenship*, 27.

<sup>156</sup> David L. Eng, *Racial castration: managing masculinity in Asian America* (Durham, NC: Duke University Press, 2007), 9.

<sup>157</sup> It is important to note that disabled people are frequently and conversely represented as asexual: these representations work to discourage the reproduction of disabled children.

social conventions, Gill argues that scenes depicting sex between the actors might serve the ableist project that the film purports to critique:

this representation of desire can potentially reinforce sexually ableist interventions where intellectual disability is too easily equated with hypersexual, animalistic activity. It is already assumed that 'idiocy' frees up individuals for excessive sexual expression.<sup>158</sup>

The idea that people with intellectual disabilities tend towards “hypersexual, animalistic activity” also precedes and structures the projects of measuring and standardizing bodies that I have described. In *Irregular Connections: A History of Anthropology and Sexuality*, Andrew Lyons argues that in the eighteenth-century, colonial representations of Sub-Saharan Africans and African Americans emphasized genital appearance and size as “the visible index of moral degeneration.”<sup>159</sup> Tying together inextricable histories and conceptions of head size, rationality, sexuality, and race, Lyons cites eighteenth and nineteenth-century written and visual texts in his argument that

Primitives were usually portrayed as lacking in emotional control and rationality and were seen to be sexually more excitable (and more physical generally) than Europeans ... Africans in particular were seen as sexually rapacious and domineering. Their genital endowments were exaggerated, their cranial capacity was underestimated.<sup>160</sup>

Attending to these depictions of primitive sexuality and self-regulation as traceable through bodily measurements reveals that head size is constituted as a metric of self-regulation and discipline. The proliferation of babies with

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<sup>158</sup> Michael Carl. Gill, *Already doing it: intellectual disability and sexual agency* (Minneapolis: University of Minnesota Press, 2015), 170.

<sup>159</sup> Andrew P. Lyons and Harriet Lyons, *Irregular connections: a history of anthropology and sexuality* (Lincoln: University of Nebraska Press, 2004), 20.

<sup>160</sup> *Ibid.*, 7.

microcephaly in the Global North shakes the foundations of the capacity contract: those babies will grow up and fail to reproduce citizens that the nation can entrust with its development. That Zika is narrativized as originating in Africa and emerging in full force out of Brazil further underscores the extent to which microcephaly is understood as racialized difference.

## CONCLUSION

In this thesis, I have begun to outline the stakes of the proliferation of both the Zika virus and microcephaly for Global Northern state development. I have shown that seemingly distinct histories—among them histories of social and life sciences, colonial violence, enslavement, and freak shows—coalesce in the contemporary moment around fears that microcephaly will impede the development of proper citizens across the world. These fears respond to the movement of contagious materialities across borders that colonial projects would rather have crossed only from the Global North to the Global South and only for the purposes of seeking and satisfying racialized pleasures sanctioned by the perceived primitivity of such sites. What these anxieties reveal is that civilized societies and subjectivities disavow racialized Otherness while simultaneously relying on the subjugation and exploitation of racialized populations for the production of proper bourgeois development. “Normal” growth charts like the one resulting from the MGRS can only be developed under a system of global capitalism that makes bourgeois conditions of life possible.

My earliest research and arguments were interested in taking up disability’s desirability. Perhaps I would argue that by desiring microcephaly, activists can challenge and disrupt the confines of liberal humanism. I envisioned questions of desire as key to analyzing anxious responses to Zika and microcephaly because desire is a site through which power produces subjects and denies subjecthood, and I was curious about how the practice of desiring can be deployed as a strategic response to problems of power and subjugation. After



working through my research and rearticulating the stakes of my project, however, I have come to understand “desiring Zika” as an untenable project but useful theoretical exercise. Transgressive symbolism is limited and confined by material, historical realities that harm and kill racialized and disabled populations. My current position is that desirability alone will not transform systems of power and inequity. However, I do think there is something to be said about desiring and imagining alternative, possible worlds. Desiring disability in this way might mean that disability becomes a framework for critiquing developmentalist, ableist systems and policies under which racialized and disabled populations continue to labor to produce bourgeois subjectivities. My thesis is concerned with how scientific methods and practices reify developmentalist logics in their regulation and measurement of difference. The central questions that my work poses and leaves unanswered are: how do we (and should we) approach and practice science in critical ways that decenter whiteness, development, and ability? What would it mean for public health interventions to be compatible with visions of disability justice? How might scientific disciplines become accountable to their violent roots and imagine anti-racist scientific futures?

## ACKNOWLEDGEMENTS

This thesis would not have been possible without the care and love I receive from my parents, twin, and partner. Thank you for believing in me.

Deep thanks to my friends for supporting me and offering mental and emotional labor as I developed my arguments and wrote my chapters. This Spring 2017 semester has demanded that my friends, classmates, and acquaintances hold space for each other in ways that I have never witnessed nor practiced before. I am deeply grateful to my friends and fellow FGSS majors for showing me love and care while enduring devastating grief. I am grateful that you have allowed me to hold space for and with you.

Thank you to the professors who have taught me how to think critically, capaciously, and historically over the course of the past four years. Specifically, I thank Professor Kimberly Drake for teaching me how to develop arguments and for her commitment to advocating for disabled students both inside and outside of her classrooms. I am grateful that I have been able to take classes with Professor Rita Roberts, whose wealth of knowledge and fierce commitment to teaching histories of resistance have transformed my understandings of power and the critical importance of History.

Thank you, Professor Cindy Forster, for embodying what it means to do accountable and empathetic academic and organizing work. Thank you for the endless compassion, reassurance, and insight that you have brought to my thesis work and that you bring to your classrooms.

Thank you, Professor Jih-Fei Cheng, for teaching me what a collaborative academic project looks and feels like. I am in awe of the ways that you connect histories, reach across disciplines, and approach scientific histories and presents using queer and feminist methods. You teach classes with the utmost care and sense of responsibility towards your students. I know that I am speaking for many when I say that we are privileged to learn from and with you.

I would not have considered any of the anti-ableist and anti-racist interventions that I attempt to make in this thesis had I not benefitted from the labor, visions, and scholarship of poor, disabled, queer, and/or trans people of color. The folks who make Sins Invalid a reality live and model disability justice. Thank you.

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