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The Child in the Basement: Debilitating Mechanisms in American Science Fiction

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The Child in the Basement: Debilitating Mechanisms in American Science Fiction

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Abstract

This project examines the tension between progressive narratives about the future that often frame disability as a medical condition with no place in the future and deliberate debilitation of certain populations for the sake of commodification. These two ideas would seem in conflict with one another, but together, they form a strategy of control. Using the interconnected discourses of medicine and US science fiction, this project synthesizes ideas from debility and disability theory, posthuman studies, medical humanities, and computer science and programming to demonstrate how these two ideas coexist. Each section includes an interchapter that introduces the key idea and contextualizes it within current US medical and disability discourses and a chapter that focuses on how that key idea is explored within science fiction literature. Android testing narratives– Philip K. Dick's *Do Androids Dream of Electric Sheep?*, Ridley Scott's *Blade Runner*, and Janelle Monae's *Dirty Computer*–are the basis of the diagnosis section. Medical indentureship narratives–Anne McCaffrey's *The Ship Who Sang*, Annalee Newitz's *Autonomous*, and Vita Ayala's *Prisoner X*–are the focus of the healthcare section. The genome chapter is an in-depth examination of the intersection between genetic research and eugenics through the lens of Octavia E. Butler's *Xenogenesis* trilogy and Cadwell Turnbull's *The Lesson*.

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I would also like to thank my non-academic readers who assisted me in my goal of making this project accessible for all who want to read it: my sibling Jake, my sister-in-law Brianna, and my dearest friend Elyse. Thank you all for your support, for your insightful questions, and for inspiring me with your bravery and hope daily. To #DisabledTwitter, thank you for challenging me to rethink all my preconceptions and for sharing vital resources.

Last, but certainly not least, I could never thank my wife Sam enough for all she has done to enable me to complete this project. From listening to me talk for hours about AI and Turing Tests, to letting me cry on her shoulder when I felt like I would never finish, to making me dinner when I was too tired after a long day of writing, she has been there with me since the beginning and has never wavered in her absolute confidence in me.

Dedication

For all my fellow disabled comrades

Contents

Introduction: Finding the Circuit

CW: descriptions of ableism, racism, transphobia, and homophobia, eugenics, child abuse

"They all know it is there, all the people of Omelas. Some of them have come to see it, others are content merely to know it is there. They all know that it has to be there. Some of them understand why, and some do not, but they all understand that their happiness, the beauty of their city, the tenderness of their friendships, the health of their children, the wisdom of their scholars, the skill of their makers, even the abundance of their harvest and the kindly weathers of their skies, depend wholly on this child's abominable misery."[1]

"Don't you talk to me about progress. Progress just means bad things happen faster."[2]

I have always found Ursula K. Le Guin's short story "The Ones Who Walk Away from Omelas" (1973) to be profoundly disquieting. It is often cited as a thought experiment similar to the infamous trolley problem: does the prosperity of the many outweigh the suffering of one (or a few)? Le Guin's narrative voice in this story is both vivid and vague, simplistic and yet provocative. Indeed, the story is less a narrative and more a single scene of the city-state of Omelas during the height of its summer festival, frozen in a single moment of utopian ecstasy. This scene describes Omelas as a pocket socialist paradise: everyone, the reader is told, is prosperous and happy. Omelas has no dictatorship or centralized government. There is no scarcity, poverty, alienation, class distinctions, or racism. There are no taboos concerning gender or sexuality. There is no organized religion, and the cultural practices celebrate art and music and joy instead of conflict and transaction.[3] Le Guin's description is purposely vague on the details, allowing the reader to fill in the exact mechanics of how they think this flourishing society

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[1] Ursula K. Le Guin, "The Ones Who Walk Away from Omelas," in *The Wind's Twelve Quarters: Stories* (New York: Harper Perennial, 2017), 280, Kindle Edition.

[2] Terry Pratchett, *Witches Abroad*, (London: Gollancz, 2014), 257.

[3] Le Guin, "The Ones Who Walk Away from Omelas," 275-280.

works. Omelas is a utopia in the truest sense of Moore’s “no-where”: a metaphor flexible enough to fit the desires and hopes of most liberal humanist dreams of a better future.

In a classic science fiction twist, the narrator reveals that this “no-where” comes at the price of keeping a small child of indeterminate gender locked in a basement “under one of the beautiful public buildings of Omelas, or perhaps in the cellar of one of its spacious private homes.”[4] They[5] are the scapegoat, the outcast, the sacrifice by which the rest of the society flourishes. Like the rest of the workings of Omelas, the narrator is vague about the mechanism by which the torment of the child creates the utopia of the city, allowing the story to work in a mythical and metaphorical capacity for the reader. The child in the basement stands in for any exploitation that enables the prosperity of the majority: they could be the working class, a racial minority, a gender minority, or any group whose labor or sacrifice serves the majority. The basement becomes a stand-in for an institution, a hospital, a non-consenting experiment, a conversion camp, the room in the attic, a jail.

However, despite the vagueness of the mechanism, in describing the child and the conditions of their imprisonment, the narrator does emphasize a certain set of the child’s characteristics, namely their physical and intellectual disabilities:

> It could be a boy or a girl. It looks about six, but actually is nearly ten. It is feeble-minded. Perhaps it was born defective, or perhaps it has become imbecile through fear, malnutrition, and neglect. It picks its nose and occasionally fumbles vaguely with its toes or genitals, as it sits hunched in the corner farthest from the bucket and the two mops….
>
> The people at the door never say anything, but the child, who has not always lived in the tool room, and can remember sunlight and its mother’s voice, sometimes speaks. “I will be good,” it says. “Please let me out. I will be good!” They never answer. The child used to scream for help at night, and cry a good deal, but now it only makes a kind of whining, “eh-haa, eh-haa,” and it speaks less and less often. It is so thin there are no calves to its legs; its belly protrudes; it lives on a half-bowl of corn meal and grease a day. It is naked.

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[4] Le Guin, 280.

[5] Le Guin uses the non-gendered pronoun *it* to refer to the child and emphasize their dehumanization within the story; I will use the more contemporary *they* unless quoting directly from the story.

> Its buttocks and thighs are a mass of festered sores, as it sits in its own excrement continually.[6]

The child's stunted growth due to malnutrition, their intellectual disorder, their nonverbal responses, and their bedsores are all disabilities. None of the other Omelans seem to have these disabilities; in fact, much of their celebration activities seem based around the capacity for physical prowess: races, parades, dancing, and so on.[7] The disability of the child becomes a marker or metaphor for alterity, for their separation and alienation from Omelan society.[8]

Furthermore, the need for injury, for the intentional disabling of the child, is the central mechanism of the Omelan system. While the intellectual disorder might have been congenital, the rest of these disabilities are trauma and torture induced. The child is starved, beaten, neglected, and restrained: "The terms are strict and absolute; there may not even be a kind word spoken to the child."[9] The use of the pronoun *it*–a strategy often used to dehumanize and devalue people in order to abuse or kill them–ties the abuse to the alterity of the child from the rest of Omelan society. The text emphasizes that, although the exact mechanism may be unclear to the reader, it is not enough for the child to exist, it must be purposely disabled and injured in order for the city to thrive in the way that it has. Disability is not just a mark of alterity, then, but a key component of social wellbeing and order. The ability of the many relies on the disability of the child.

Visiting the basement and observing the child is a key initiation to citizenship in Omelas. The story ends with the choice that every citizen of Omelas has to make. The majority choose to

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[6] Le Guin, 281.

[7] This is not to say that disabled people can't participate in such activities, merely that the physicality of the majority of Omelans is contrasted with the impairments of the child.

[8] Jay Dolmage, in writing about disability metaphors and myths in literature and popular culture, observes that there is a long tradition of emphasizing a character's disability as a way of "Describing the body of an individual and accentuating its foreignness, abnormality, or exoticness allow for insinuations of internal deviance or lack." Jay Dolmage, *Disability Rhetoric* (New York: Syracuse University Press, 2014), 41.

[9] Le Guin, "The Ones Who Walk Away from Omelas," 282.

stay, knowing that their prosperity is linked with the child's misery. In fact, many of them use the child's many disabilities as justification for their treatment of them:

> But as time goes on they begin to realize that even if the child could be released, it would not get much good of its freedom: a little vague pleasure of warmth and food, no doubt, but little more. It is too degraded and imbecile to know any real joy. It has been afraid too long ever to be free of fear. Its habits are too uncouth for it to respond to humane treatment. Indeed, after so long it would probably be wretched without walls about it to protect it, and darkness for its eyes, and its own excrement to sit in.[10]

The prosperity and joy of Omelas are not for the child, who could never possibly be happy in their disabled condition, but for the nondisabled who, presumably, can appreciate and enjoy it. There is no place for a disabled child in a utopian city like Omelas except in the basement. The choice that most Omelans make is to sacrifice the future of the disabled child in the basement to protect the nondisabled futures of the rest of their children.[11] They accomplish this by erasing the child from their society, even while knowing the child exists. The fact that the child is hidden away in a basement, literally under the city/supporting the city, implies the reluctance of the citizens to look at the child, whose condition inspires feelings of disgust, shame, and anger.[12]

Some Omelans, however, reject this arrangement. When confronted with the suffering of the child in the basement and the knowledge that their happiness is dependent on debilitation, they leave the city.[13] The moral of this admittedly fableistic story seems to be that many prosperous societies or utopias[14] rely on debilitation and exploitation, and the only way to resist this justification is to opt-out of this version of the future. The ones who leave cannot rationalize their happiness at the expense of the child's anguish in the ways that the mainstream society does, so they search for something "less imaginable," symbolizing the "not-yet consciousness"

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[10] Le Guin, 282.
[11] "The health of their children" is specifically mentioned in the text. Le Guin, 281.
[12] Le Guin, "The Ones Who Walk Away from Omelas," 281.
[13] Le Guin, "The Ones Who Walk Away from Omelas," 283.
[14] Although, as I argue in Chapter Two, Omelas is not really a utopia.

of Ernst Bloch or the “queerness as horizon” of Jose Esteban Muñoz.[15] Their rejection of the Omelan paradigm–exploitation of the one for the good of the many–is simultaneously a recognition of the evil of the Omelan system (and their complicity in that system by staying) and a hope for a better system somewhere else.

However, I am not satisfied with the two options–to stay or walk away–presented at the end of the story. There is one person who has no choice: the child. Why didn’t the ones who left free them? How can they leave, knowing that such a society exists? By leaving the child to their fate, aren’t they just as culpable as the ones who stay to reap the benefits of the child’s torture? These questions provoke an entirely new interpretation of Le Guin’s story, one that implicates both those who would stay and those who would leave in the imprisonment of the child.

Disability Studies and Progressive Narratives

Most analyses of Le Guin’s story have focused on the flexibility of the metaphor, the ways in which societies will justify exploitation through cost-benefit analysis, scapegoating, and displacement of their guilt into more socially acceptable outlets.[16] However, many do not actually look at the child as a nexus point of social control, the closure of a circuit that must flow from a positive to a negative, looping back around to power itself once again. The child is both valued and unvalued, or to put it more succinctly, is v*alued precisely because they are unvalued*. They are erased from the dominant society through imprisonment, and yet they are the most necessary member of that society, hidden and yet visible.

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[15] Jose Esteban Muñoz, *Cruising Utopia: The Then and There of Queer Futurity* (New York: New York University Press, 2009), 19.

[16] Even Le Guin, in her introduction to the story, credits the idea of a “lost soul” that ensures utopia to philosopher William James and envisioned the idea as “The dilemma of the American conscience.” Le Guin, introduction to “The Ones Who Walk Away from Omelas,” in *The Wind’s Twelve Quarters: Stories*, (New York: Harper Perennial, 2017), 275, Kindle Edition.

This tension between these two discourses–one that seeks to erase and one who seeks to exploit–forms the basis of this project. Le Guin's metaphor, perhaps unintentionally, allows us to explore how these two seemingly conflicting social imperatives form a circuit of disciplinary power, the currents of which become more apparent every day as the US sheds its veneer of civility in pursuit of corporatized power. While this metaphor, as mentioned before, could be applied to any number of interlocking systems of oppression in the US, the fact that the child is coerced into performing a brutal form of physical labor for the good of society invites us to examine the disabling mechanisms of capitalism, both discursive and material.

Traditional disability studies often rely on a distinction between two models of disability: the medical model and the social model, positioning them as two opposing paradigms of how disability is defined within scientific and cultural discourses. The medical model of disability understands disability to be a deviation from the normal body, that is, the healthy or able-bodied.[17] Within the medical model, disability is a pathology, a defect, and should be understood and treated within a medical context. For the medical model, disability is purely an individual matter, a physical impairment that affects only the patient. Under the medical model, disability, like a disease or any other medical condition, is something to be eradicated, cured, or treated, inspiring federal grants, fundraisers, non-profits, charities, and other avenues of revenue in the billions. The goal of the medical model is progressive, to advance medicine and medical technology to the point where most or all disabilities can be cured, and most people exist in a state of health/ability.

The social model of disability, on the other hand, rejects this premise and argues that disability is a social construct, a hierarchy in which certain kinds of bodyminds–the normal or

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[17] See Kafer, Linton, Dolmage, etc.

abled ones–are privileged over others.[18] Jay Dolmage calls this normalcy “a useful fiction” that rhetorically and materially creates a binary between ability/disability.[19] The social model argues that this social construction of disability manifests itself both discursively–via representations of disabled people as villains, tragic or pathetic figures, or burdens on society–and materially–via inaccessible architecture, employment, and healthcare. The social model argues that the world is made for nondisabled people while it actively excludes or even harms disabled people. Rosemarie Garland-Thompson calls this binary fitting/misfitting: “A fit occurs when a harmonious, proper interaction occurs between a particularly shaped and functioning body and an environment that sustains that body. A misfit occurs when the environment does not sustain the shape and function of the body that enters it.”[20] While mainstream disability studies has used the social model to challenge this paradigm of what it means to be abled or disabled, many disability scholars have utilized the medical versus social model paradigm in the pursuit of two goals. The first to assimilate disabled people into US society, usually by means of making physical and social spaces more accessible and equitable. The second goal has been to interrogate the public and textual discourses that create and sustain representations of disabled people or to critique the lack of accurate representation.[21] The often unstated narrative of the social model, like the medical model, is also progressive: to advance public and legal

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[18] See Linton, Dolmage, Garland-Thompson, Davis, etc.

[19] Jay Domage, *Disability Rhetoric* (New York: Syracuse University Press, 2014), 10.

[20] Rosemarie Garland-Thompson, “Misfits: A Feminist Materialist Disability Concept,” *Hypatia* 26, no. 3 (2011): 594, https://www.jstor.org/stable/23016570.

[21] Both of these goals have been summed up quite succinctly by Simi Linton: “Disability studies' project is to weave disabled people back into the fabric of society, thread by thread, theory by theory. It aims to expose the ways that disability has been made exceptional and to work to naturalize disabled people–remake us as full citizens whose rights and privileges are intact, whose history and contributions are recorded, and whose often-distorted representations in art, literature, film, theater, and other forms of artistic expression are fully analyzed.” Simi Linton, “What is Disability Studies?” *PMLA*, 120, no. 2 (2005): 518, doi: 170.205.180.61.

understandings of disability to the point where there is no longer misfitting for disabled people either spatially or discursively.

The social model also recognizes that the creation of the hierarchy between nondisabled and disabled, in the US at least, stems from the needs of a capitalist system. Robert McRuer famously connects social constructions of disability with capitalism production in a theory he calls "compulsory able-bodiedness," meaning, "free to sell one's labor but not free to do anything else effectively meant free to have an able body but not particularly free to have anything else."[22] In order to participate in a system in which labor of one's body is traded for human rights such as food, clothing, shelter, and healthcare, one must be able to commodify one's body in the ways prescribed by the system, turning the body into what Foucault calls "abilities machines."[23] McRuer, riffing on Judith Butler, notes that perfect ability, like perfect masculinity, is not achievable, but the performance and imitation of ability and the inevitability of failure drive capitalist assumptions of labor and production. Ability defines itself in opposition to disability, much like heterosexuality defines itself in opposition to queerness.[24] In the social model of disability, "normalcy and disability are part of the same system,"[25] two sides of the same coin in which ability is defined by its opposite and vice versa. These definitions are produced by the capitalist imperative for labor.

This "compulsion" to ability is so ingrained in capitalist discourses that many nondisabled people find it simply inconceivable that a disabled person might have any experience of life that is not unfulfilled or miserable. They assume that everyone, including

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[22] Robert McRuer, *Crip Theory: Cultural Signs of Queerness and Disability* (New York: New York University Press, 2006), 8.

[23] Michel Foucault, *The Birth of Biopolitics* (New York: Palgrave Macmillan, 2008): 226.

[24] McRuer, 9-10

[25] Leonard Davis, *Enforcing Normalcy: Disability, Deafness, and the Body* (London: Verso, 1995), 2.

disabled people, wish to be nondisabled. If, according to the medical model, disability is a pathology, a defect, then for most people, disability is something to be cured, fixed, erased. If it cannot be erased, then the inability to do so becomes a tragedy, a terrible fate worse than death.[26] Alison Kafer, a disabled scholar, observes that disabled people are often told that they have no future, or no good future:

> their visions assume a future of relentless pain, isolation, and bitterness, a representation that leads them to bless me, pity me, or refuse to see me altogether. Although I may believe I am leading an engaging and satisfying life, they can see clearly the grim future that awaits me: with no hope of a cure in sight, my future cannot be anything but bleak.[27]

The Omelans would understand this reasoning; after all, part of their justification for leaving the child in the basement is that it must be too disabled to live a good life, echoing the many ways in which nondisabled people in real life often recommend suicide or institutionalization for disabled individuals.

Individual futures are not just characterized by physical attributes of ability, but social and cultural ones too. Most "no-where" utopias like Omelas are imagined in terms of a lack of disability, illness, or impairment. Progressive narratives that rely on a forward linear movement from the way things are to a future where things are better. These narratives often refer to the future in curative terms both metaphorical–such as "curing" poverty or illiteracy–and literal–curing diseases and disabilities.[28] One look at almost any disability or disease related nonprofit's website like Spina Bifida Association's will uncover progressive language related to "working to build a better and brighter future."[29] Disabled people have, with almost remarkable precision,

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[26] Disability activist Imani Barbarin writes, "Many non-disabled people, often without prompting, have told me that if they were to become disabled that they would want to die." Imani Barbarin, "Death by a Thousand Words: COVID-19 and the Pandemic of Ableist Media," *Refinery 29*, August 30, 2021, https://www.refinery29.com/en-us/2021/08/10645352/covid-19-and-the-pandemic-of-ableist-media.

[27] Alison Kafer, *Feminist, Queer, Crip*, (Bloomington: Indiana University Press, 2013), 2.

[28] Kafer, 27.

[29] "Spina Bifida Association," accessed December 27, 2021, https://www.spinabifidaassociation.org/.

been excised from progressive narratives about the future; in fact, their non-existence in the future is usually used as a marker of a successful progressive narrative.

However, these progressive narratives rarely interrogate the mechanisms by which these wondrous futures are to be achieved and the ways in which capitalist societies like the US rely not only on the specter of disability to motivate the masses but on the production of disability, "a practice of rendering populations available for statistically likely injury,"[30] itself as a valuable biocapital. After all, if the goal of a progressive narrative of the future is to eliminate or cure disability and create a post-race, post-scarcity, post-fill-in-the-blank social evil, then who would be left to work in risky or physically debilitating jobs like stocking Amazon warehouses, processing meat in factories, picking fruit, or performing back-breaking domestic labor? To whom would pharmaceutical companies sell thousand-dollar drugs or the hospitals charge ten-thousand dollar surgeries? How would health insurance companies make their money? The progressive narrative that denies or ignores these systems of debilitation "reinforces capitalist scarcity politics by saying that only so many people can be included or have rights, and that in order to include or give rights to some people, somebody else must still be excluded and denied rights by definition."[31] Without the child in the basement–we are told–Omelas society would collapse.

Eugenics vs. Debilitation: Two Paradigms of Biopolitics

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[30] Jasbir K. Puar, *The Right to Main: Debility, Capacity, Disability* (Durham and London: Duke University Press, 2017), 205.

[31] Lydia X. Z. Brown, "Rebel: Don't Be Palatable: Resisting Cooptation and Fighting for the World We Want," in *Resistance and Hope: Essays by Disabled People*, ed. Alice Wong (San Francisco: Disability Visibility Project, 2018), 9.

To explain how progressive narratives that promise the eradication of disability and the production of disability as biocapital work together, let's return to the circuit metaphor I introduced earlier. It seems that in order to participate in a capitalist society, there must be both "compulsory able-bodiedness" *and* compulsory disabled-bodiness. They are both representative of two distinct, overlapping, and yet shifting paradigms of biopolitics.

Progressive narratives about disability and disease rely on a sanitized form of eugenics, a specific paradigm of biopolitics invested in the belief that certain genetic traits or characteristics are more desirable than others. The term *eugenics* has a negative reputation amongst many left-wing activists, scholars, and authors mainly due to its association with fascism, concentration camps, and horrific experiments. Only Nazis and right-wing politicians who believe in race science are supposed to espouse eugenic beliefs, so it is no wonder that many on the left do not recognize the eugenics in their own discourses. But what is the pursuit of bodily normalcy as a social good if not eugenics? What does eugenics look like in progressive narratives, narratives that often espouse liberal ideals of freedom, individualism, and autonomy? It looks like the forced sterilization of vulnerable populations like disabled people and people of color.[32] It looks like using gene technology to alter and suppress certain genes (see GENOME). It looks like isolating disabled and neuroatypical people in institutions or conservatorships.[33] It looks like forcing a disabled patient to sign a DNR in order to receive treatment. It looks like medical

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[32] These sterilizations are not only procedures of the past, but as currently happening to this day. Sam Courtney-Guy, "Disabled woman must have contraceptive device fitted on court order," *Metro 50*, April 21, 2020, https://metro.co.uk/2020/04/21/disabled-woman-must-contraceptive-device-fitted-court-order-judge-rules-12588911/?fbclid=IwAR0NXPZ49tuSxFCclv-bVuJzY9u20gALkbsfdfN6sgsK4RS0Tnh1XFy4Lys.

[33] Haley Moss, "Britney Spear's Conservatorship is a Disability Rights Issue that Deserves More Attention," *Teen Vogue*, June 25, 2021, https://www.teenvogue.com/story/britney-spears-conservatorship-disability-rights#:~:text=Under%20conservatorship%2C%20disabled%20adults%20face,money%20management%2C%20and%20healthcare%20decisions.

professionals recommending suicide to disabled patients.[34] It looks like medical professionals recommending abortion of fetus diagnosed with Down syndrome because a child with Down syndrome has no viable future in a progressive narrative.[35] It even looks like corporate and public initiatives defining wellness as optimization and incentivizing healthy and non-disabled people in the name of efficiency, effectively shutting disabled people out of the labor marketplace.[36] These examples are broadly supported by both sides of the political divide in the US and by many centrists. Barbarin sums it up best in her tweet: “Eugenics has no political party. It's as comfortable with the straw bans on the left as the removal of healthcare for those with pre existing [sic] conditions on the right.”[37]

The reason eugenics is still so tightly woven into these progressive narratives of the future is that the dominant form of understanding disability and its tragic non-future come from the medical model. Medicine as a field and practice tends to, like many of the sciences, see itself as above and outside social discourses (see DIAGNOSIS), but in reality, eugenics as a philosophy was developed and promoted within the medical field (see GENOME). Eugenics makes perfect sense within the medical model of disability as the goal of eugenics is to cure/correct/eliminate disability, suffering, and other undesirable bodily experiences from the human population, what Garland-Thompson calls “eugenic logic.”[38] If “disability is something to

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[34] Harold Braswell, “Canada is plunging toward a human rights disaster for disabled people,” *The Washington Post*, February 19, 2021, https://www.washingtonpost.com/outlook/canada-is-heading-toward-a-human-rights-disaster-for-disabled-people/2021/02/19/01cbfca4-7232-11eb-85fa-e0ccb3660358_story.html.

[35] Sarah Zhang, “The Last Children of Down Syndrome,” *The Atlantic*, December 2020, https://www.theatlantic.com/magazine/archive/2020/12/the-last-children-of-down-syndrome/616928/.

[36] Eugenics also takes many other forms in the US as well: see incarceration, anti-immigration, segregation, and many, many others.

[37] In this tweet, Barbarin is referencing the controversial state laws banning plastic straws in the name of environmental justice, laws that do not take into account the needs of many disabled individuals for the flexibility of plastic straws in order to drink. Imani Barbarin (@Imani_Barbarin), “Eugenics has no political party….,” *Twitter*, June 18, 2019.

[38] Rosemarie Garland-Thompson, “The Case for Conserving Disability,” *Bioethical Inquiry* 9 (2012): 339, doi: 10.1007/s11673-012-9380-0.

be avoided and the world would be a better place if disability could be eliminated"[39] as the medical model states, then the progressive narrative inherent in that model must rely on the "eugenic vision"[40] of erasing disability and promoting ability as a key factor in both individual health and in capitalism production. Many of the mechanisms of eugenics have been medical procedures and technologies–something further explored in GENOME and Chapter 3 of this project–further intertwining the two discourses together in a mutual pursuit of progress, i.e., a future without disability.

However, if we look at the other end of the circuit, we encounter the other imperative of capitalism, the imperative to produce and maintain biocapital. Jasbir Puar calls this imperative "debilitation," centering the intentional physical subjugation of certain populations–usually non-white and/or queer–as an essential result of capitalism production.[41] For Puar, debility is a distinct yet overlapping concept to disability because it focuses on the "slow wearing down of populations instead of the event of becoming disabled."[42] Within this paradigm of biopolitics, debility, capacity, and disability exist as overlapping and fluid categories, problematizing the social model as well as the medical model by arguing that they still rely too much on disability as a fixed identity rather than examining the discursive and material mechanisms by which populations are targeted and . Instead, these models both rely on what Lauren Berlant calls "the cruel optimism" of their own progressive narratives.[43] The promise of a world in which disabled individuals can fully participate in a capitalist society fails to interrogate the ways in which that participation necessitates the debilitation of others: "Debility addresses injury and bodily

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[39] Garland-Thompson, 340.
[40] Rebecca Bennett, "When Intuition is Not Enough: Why the Principle of Eugenic Vision Must Work Much Harder to Justify Its Eugenic Vision," *Bioethics* 28, no. 9 (2014): 448.
[41] Puar, *The Right to Main: Debility, Capacity, Disability*, 205.
[42] Puar, xiii-xiv.
[43] Lauren Berlant, *Cruel Optimism* (Durham: Duke University Press, 2001), 24.

exclusion that are endemic rather than epidemic or exceptional, and reflects a need for rethinking overarching structures of working, schooling, and living rather than relying on rights frames to provide accommodationist solutions."[44] The prolific need for biocapital–for workers who will trade on their bodies and minds as the means of production–requires systematic and deliberate debilitation in all levels of capitalist infrastructure.

These two aims–the progressive narrative of eugenics and the unspoken need for debilitation–seem at first contradictory, but in reality, they are the basis of that circuit, the mechanism of discursive and material control. The progressive narratives promising a better future disguises the very means by which that future is produced. This project seeks to explore some of the mechanisms by which these two paradigms of biopolitics–eugenics and debilitation–form that circuit.

COVID-19, Comorbidities, and the CDC

It is not difficult to find examples of this circuit at work in current US public health discourse, especially during the COVID-19 pandemic. Consider Dr. Rochelle Walensky, the CDC director, who went on Good Morning America in early 2022 to defend the CDC's controversial guideline shortening the recommended isolation period after infection from ten to five days. When asked about how the efficacy of the vaccine could impact public health initiatives about the omicron variant of the virus, Walensky replied, "The overwhelming number of deaths, over 75%, occurred in people who had at least 4 comorbidities. So really these are people who were unwell to begin with and yes, really encouraging news in the context of omicron."[45] Walensky's statement echoes a trend in public health guidance since the beginning

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[44] Puar, *The Right to Main: Debility, Capacity, Disability*, xvii.
[45] Rochelle Walensky, *Good Morning America*, Good Morning America, January 7, 2022.

of the pandemic: sick, immunocompromised, and disabled people are expected to die or become more disabled.[46] In the wake of this statement, hundreds of disabled activists took to Twitter and wrote open letters decrying Walensky's disregard for disabled lives: "[It] highlights the fact that the Director and the CDC view people with disabilities as acceptable losses during the COVID-19 pandemic. Her comments, even with the additional context, reveal the systemic and institutional biases against disabled people that determine our lives are inherently worth less."[47] Matthew Cortland, a disabled lawyer and advocate for disabled people, called the statement "eugenicist:" "our deaths clearly don't count."[48] After Walensky apologized for the statement and promised to "take steps to protect those at highest risk,"[49] Erin Biba, a science writer and contributor to WIRED, tweeted, "This is it. Days and days of people with disabilities and chronic illness pleading for people to place value on their lives after the CDC Director admitted to eugenics policy and the best she can do in response is nebulous, non-specific 'taking steps.'"[50]

The term *comorbidity* itself comes from a medical model of disability. The commonly used definition of the term is "The coexistence of two or more diseases, disorders, or

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[46] While Walensky did apologize shortly after this appearance and the CDC promised to work with disabled activists to make their policies more equitable, a month later Walensky compared wearing a mask to wearing Hester Prynne's scarlet letter, a symbol of isolation and shame, further stigmatizing disabled and immunocompromised people who rely on masks to protect them. Andy Slavitt, "What the CDC Director Really Wants You to Know (with Rochelle Walensky)," February 21, 2022, in *In the Bubble with Andy Slavitt*, podcast, MP3 audio, 1:02:47, https://omny.fm/shows/in-the-bubble/what-the-cdc-director-really-wants-you-to-know-wit.

[47] Marisa Kabas, "Disabled Americans Feel Abandoned by CDC. Now, CDC Is Desperate to Make Amends," *Rolling Stone*, January 11, 2022, https://www.rollingstone.com/politics/politics-news/covid-cdc-disability-comorbidity-anger-1282759/.

[48] Matthew Cortland (@mattbc), "Today, the @CDCDirector said: The overwhelming number of deaths, over 75%, occurred in people who had at least 4 comorbidities…," *Twitter*, January 7, 2022, https://twitter.com/mattbc/status/1479637131748380672

[49] Rochelle Walensky (@CDCDirector), "We must protect people with comorbidities from severe #COVID19. I went into medicine – HIV specifically – and public health to protect our most at-risk. CDC is taking steps to protect those at highest risk, incl. those w/ chronic health conditions, disabilities & older adults," *Twitter*, January 9, 2022, https://twitter.com/CDCDirector/status/1480327258564964356.

[50] Biba, Erin (@erinbiba). "This is it. Days and days of people with disabilities and chronic illness pleading for people to place value on their lives after the CDC Director admitted to eugenics policy and the best she can do in response is nebulous, non-specific 'taking steps.'" *Twitter*, January 9, 2022. https://twitter.com/erinbiba/status/1480392205831491585.

pathological processes in one individual, esp. as a complicating factor affecting the prognosis or treatment of a patient."[51] In the medical model of disability, these diseases or disabilities are individual issues, ailments that affect them personally and must be taken into consideration when prescribing a course of treatment. As listed on the CDC website, some comorbidities that put individuals at serious risk for hospitalization and/or death from COVID-19 include cancer, chronic kidney disease, chronic liver disease, chronic lung diseases (such as asthma or cystic fibrosis), dementia or other neurological conditions, diabetes, Down syndrome, heart conditions, HIV infection, immunocompromised state, mental health conditions, obesity, sickle cell disease, smoking, organ transplant, stroke, substance use disorders, and tuberculosis.[52] This list is updated frequently as more research on COVID-19 is published, but almost all of the comorbidities listed are recognized disabilities under the American Disabilities Act, the primary legal document defining disability in the US currently. On one end of the circuit, Walensky's statement is meant to be hopeful, to promise a brighter future free from the current anxieties and turmoil of living in an active pandemic. On the other end of the circuit, this statement carries with it an understanding that there are certain populations–disabled and ill people–who are expected to die for the good of society.

However, it is not only disabled people who are vulnerable to this rhetoric: getting infected with the virus with all its attendant complications–the potential for disability, Long COVID, chronic illnesses, and death–is now an expected part of the life of all members of the population in in relation to their ability to continue providing labor and value to their employers. When the CDC reduced the guidance on how long someone infected with COVID-19 should

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[51] "Comorbidity, n.," OED Online, December 2021, Oxford University Press, https://www.oed.com/view/Entry/261449?redirectedFrom=comorbidity&.

[52] "People with Certain Medical Conditions," *CDC*, December 14, 2021, https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html.

isolate from ten days to five days, Dr. Anthony Fauci, chief medical advisor to President Joe Biden and the face of the US government response to the public health threat of the pandemic, said in a statement that the reasoning for this change was directly related to labor shortages: "I think that was a very prudent and good choice on the part of the CDC which we spent a considerable amount of time discussing. Namely, getting people back in half the time that they would have been out so they can get back to the workplace doing things that are important to keep society running smoothly."[53] This need for labor, for someone to voluntarily become disabled or debilitated for the sake of their employment, reflects the other end of the circuit, creating the tension between eugenics and debilitation needed in order to maintain capitalist structures. This tension was evident before the COVID-19 pandemic, but it is even more transparent and clear during a time in which people are asked to sacrifice their health and wellbeing for the sake of capitalism.

Science Fiction and the Study of the Now and the Future

This project argues that one way of understanding these issues is through the study of US science fiction. Nowhere is this tension between eugenics and debilitation as apparent as it is in science fiction because science fiction is inextricably linked with exploration of social meanings of bodies and minds through cognitive estrangement[54] and defamiliarization.[55] The tradition of

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[53] Abigail Johnson Hess, "Dr. Fauci: CDC reducing Covid isolation time guidelines will 'get people back to jobs,'" *CNBC*, December 28, 2021, https://www.cnbc.com/2021/12/28/dr-fauci-cdcs-reduced-isolation-time-will-get-people-back-to-jobs.html.

[54] Suvin calls this *cognitive estrangement*—the ability to engage in constructing fictional alternative realities or possibilities that radically shift the way you think about the one that you are actually in. Cognitive estrangement is unique to science fiction because the very mechanism of the genre is to explore other presentations of reality, usually in the future or near future. Darko Suvin, *Metamorphoses of Science Fiction: On the Poetics and History of a Literary Genre* (New Haven: Yale University Press, 1979).

[55] Or approaching social and political issues sideways. We can see defamiliarization in every Pregnant Man (compulsory heteronormativity), alien invasion (colonization), rebel alliance (anti-fascism), and cyberpunk (the emergence of posthuman identity and technological anxiety) storyline that science fiction has to offer.

science fiction texts negotiates and renegotiates a kaleidoscope of possible futures, a multiverse of futures, each in conversation with each other and with imagined presents and imagined pasts. Many have argued that it has the unique potential of allowing writers and readers to imagine otherwise; however, I think unstated in this claim is that science fiction also has the power to allow writers and readers to imagine the *same*. Imagining the *same*–a future in which the same circuit of disciplinary power that exists now still exists–can allow a powerful critique of progressive narratives and their disavowal of debilitation.

Science fiction is also not a new genre to the field of disability studies or medical humanities. Much of the study of disability in science fiction has focused on representation of real and fantastic disabilities, a refutation of erasure. Much of the study of medicine or healthcare in science fiction studies has focused on things like representation, technology, or ethics. All of these are important avenues of study, but very few have examined the ways in which science fiction allows us an opportunity to examine assemblages of medicine, technology, disability, race, gender, and sexuality that all create the circuits between eugenics and debilitation.

In one tradition, science fiction futures, especially utopian ones, often espouse progressive narratives and eugenics, envisioning a future where disability and disease have been cured. Marge Piercy's seminal feminist science fiction text *Woman on the Edge of Time* (1976) has been celebrated for its radical imagining of bioengineering to diversify skin tones and create a post-race, post biological sex utopia, but the text has also been critiqued for its use of that same technology to eliminate physical disabilities and "birth defects."[56][57] The Federation in *Star Trek*, has eliminated or "corrected" most forms of illness and disability: even the blind Geordi LaForge

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[56] Marge Piercy, *Woman on the Edge of Time*, (New York: Ballantine Books, 1976), 246.

[57] Kafer is one such critic, and her full analysis of progressive "democratic science" in feminist texts like *Woman on the Edge of Time* is available in her book *Feminist, Queer, Crip*. 73.

in *The Next Generation* has a cybernetic visor that allows him to "see" in a way that more or less makes him an abled member of the crew. These progressive futures rely on the eugenics paradigm (although they would rarely admit to it) and ignore the other end of the circuit. They imagine the future otherwise, but not in a way that admits disabled people.

Despite this, or perhaps because of this, science fiction still remains a genre that is deeply interested in disability, debility, and capacity; in fact, Michael Bérubé observes that "the genre of science fiction is as obsessed with disability as it is with space travel and alien contact."[58] American science fiction is engaged in a centuries-long discourse about the human body, what it is, what its limits are. Often, even in texts that espouse progressive narratives, some other form of debilitation has occurred, whether realistic or fantastic. These defamiliarized debilitations allow for the exploration of the instability within the eugenics-debilitation circuit.

The study of science fiction in this way is risky because it involves a reading of real medical and material issues onto texts that are definitely fictional and often metaphorical. As one of my advisors once said to me during my dissertation proposal defense, "You know the Borg aren't real, right?"[59] To overly center science fiction as an accurate or even prophetic vision of the future would be a mistake:[60] "Science fiction is not predictive; it is descriptive," as Ursula K. Le Guin would say.[61] As a genre, science fiction is often more about defamiliarization—approaching social and political issues sideways—and cognitive estrangement—the ability to engage in constructing fictional alternative realities or possibilities that radically shift the way the reader thinks about the one they are actually in—than it is about authors trying to predict the

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[58] Michael Bérubé, "Disability and Narrative," *PMLA* 120.2 (2005): 568–76, doi: 10.1632/S0030812900167914.

[59] Thank you, Dr. Roberts, for a question that has been of immeasurable use to me when defining the limits of my project.

[60] Although Octavia E. Butler's *Parable of the Talents* in its almost eerie depictions of a Trump-like demagogue and climate catastrophe may challenge this assumption.

[61] Ursula K. Le Guin, "Introduction" in *The Left Hand of Darkness* (New York: Ace Books, 2000), xii.

future. Thus, it is important to recognize that many of the texts I examine in this book represent defamiliarized forms of debilitation that are actually occurring in the US at this very moment.

In one way, this is an asset to this project. As mentioned earlier in this introduction, most scholars who study disability in literature (science fiction or otherwise) focus mainly on representation of disability, accessibility, and eugenics. The current focus of the social model on disability as an identity precludes discussion of the mechanisms by which people become disabled, discursively and physically, and often exclude how the debilitation of certain populations is essential to the functioning of capitalism. Only one half of the circuit is under scrutiny, but without the other half, there can be no meaningful action to dismantle these systems. Science fiction is often not only "obsessed with disability," but it is also obsessed with *how* disability is manufactured and reproduced. This project seeks to study science fiction texts that push the limits of identity-based models of disability and interrogate the eugenics-debilitation circuit as it currently exists in US healthcare and medical systems via defamiliarization.

However, there is something to be said for the temporal liminality of science fiction as texts that rely on the future as a space of potentiality, "anticipatory consciousness" as Bloch says. If, as Gloria Anzaldua claims, "nothing happens in the 'real' world unless it first happens in the images in our heads" ("La conciencia de la mestiza" 385), then science fiction can be a place to practice the dismantling of the circuit, to practice a more equitable and just future. Of course, Black and POC people have been using science fiction in this way for decades: "For marginalized people, this can mean imagining a future or alternative space away from oppression or in which relations between currently empowered and disempowered groups are altered or improved.[62] Science fiction is often published “daydreams,” but that doesn’t mean that those daydreams are not powerful, and they often do not stop at the page. Walidah Imarisa writes, “All organizing is science fiction,” indicating that even the belief itself that the world could be better is an act of the imagination of science fiction. The question that all daydreamers must ask themselves is does their daydream imagine otherwise? Or does it imagine the same?

This Project

My theoretical approach is interdisciplinary, synthesizing ideas from debility and disability theory, posthuman studies, medical humanities, and computer science and programming. Each section includes an interchapter that introduces the key idea and contextualizes it within current US medical and disability discourses and a chapter that focuses on how that key idea is explored within science fiction literature. Android testing narratives–Philip K. Dick’s *Do Androids Dream of Electric Sheep?*, Ridley Scott’s *Blade Runner*, and Janelle Monae’s *Dirty Computer*–are the basis of the diagnosis section. Medical indentureship narratives–Anne McCaffrey’s *The Ship Who Sang*, Analee Newitz’s *Autonomous*, and Vita Ayala’s *Prisoner X*–are the focus of the healthcare section. The genome chapter is an in-depth examination of the intersection between genetic research and eugenics through the lens of Octavia E. Butler’s *Xenogenesis* trilogy and Cadewell Turnbull’s *The Lesson*.

Language and Community

Terminology is highly contested in both disability theory and in social discourses surrounding disability, so it is important for me to define the usage of certain terms used in this

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[62] Sami Schalk, *Bodyminds Reimagined: (Dis)ability, Race, Gender in Black Women’s Speculative Fiction* (Durham: Duke University Press, 2018), Kindle Edition.

book. First, readers will notice that I describe disabled individuals, including myself, with identity-first language as opposed to person-first language: I am a *disabled* person, not a person *with* a disability.[63] There are multiple reasons for this: the first, and most important, is that this is what many disabled individuals prefer. Emphasizing the disability through identity-first language– "disabled person," "blind person," "autistic person," "Deaf person" –emphasizes solidarity within various disabled communities and solidarity with the disabled community as a whole. With identity-first language, the disability is an important and valuable part of who the person is. Also, many other communities use identity-first language. Readers would be uncomfortable saying "a person with Blackness" or "a person with gayness," so it is worth asking why disability is described differently.[64]

Those who would argue in favor of person-first language would answer that question by claiming that identity-first language emphasizes disability too much and runs the risk of defining the person too rigidly within a diagnosis. However, it is worth noting that it is mainly nondisabled people who argue this. Disability cannot be separated from a disabled person's identity, and the physical and social experiences of disability, especially in an ableist society whose infrastructure is not designed for disabled people, already impact disabled people on a daily basis. Insisting that a disabled person refer to themselves in person-first language minimizes the ways in which a disabled person is already defined by their disability in social and medical discourses.

Secondly, I use the terms *bodies*, *minds,* and *bodyminds* to refer to specific theoretical assemblages of physical and mental aspects. The body and the mind are often separated within

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[63] I had an infection when I was 25 that left me permanently disabled.

[64] This is not to exclude Black disabled people or Black gay disabled people. Intersectionality is deeply important to identity-first language.

medical and philosophical discourses, courtesy of the Decartes and the last effects of the Enlightenment, and mental, cognitive, and physical disabilities are often treated as distinct entities. However, the term *bodymind*, a materialist feminist term originating with Margaret Price, represents the reimagining of the two as enmeshed.[65] In this book, I use the term *bodymind* when emphasizing the enmeshment, but I also use *body* and *mind* when discussing medical procedures, discourses, and protocols that separate the two. Readers will notice that unless I am referring to a specific person or character, I use the plural of all of these terms in order to emphasize the diversity of bodies, minds, and bodyminds.

Finally, I use many different words to describe the institutions of capitalism in medical discourses and their methods of debilitation. *Medical-industrial complex* is a term commonly used to describe the various sectors of business that have arisen in the medical field over the past century. This industry includes medical billing, insurance companies, pharmaceutical corporations, medical device manufacturers, etc. All of these sectors form one of the most profitable industries in the US. To emphasize the methods by which labor and value under capitalism have been tied so intimately to bodyminds through assemblages of disability, capacity, and debility, I use the terms *biolabor* and *biocapital*. Biocapital represents the given value that can be extracted from certain bodyminds. Biolabor is a term that emphasizes the intimate connection between bodyminds and the imperative for labor under a capitalist system.

Another important consideration for this project is the way in which I incorporate a diversity of voices of disabled people, especially those activists who do the majority of their work on social media. Social media platforms, especially Twitter, have been a modality that allows many disabled people to form communities, network, and organize in ways that

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[65] Margaret Price, "The Bodymind Problem and the Possibilities of Pain," *Hypatia* 30, no. 1 (2015): 270, https://cpb-us-w2.wpmucdn.com/u.osu.edu/dist/3/41686/files/2017/01/Price-The-Bodymind-Problem-vlbk4h.pdf.

previously were not accessible. Prominent disabled activists such as Imani Barbarin (@Imani_Barbarin), Alice Wong (@SFdirewolf), Vilissa Thompson (@VilissaThompson), Matthew Cortland (@mattbc), Emily Ladau (@emily_ladau), Grant Stoner (@Super_Crip1994), Melissa Blake (@melissablake), Rebecca Cokely (@RebeccaCokley), and many, many more all use Twitter as a community space that many refer to as #DisabledTwitter. Some of these activists are scholars and some are not. Academia as an institution is often inaccessible or downright hostile towards disabled students, causing many activists–especially activists of color and other minority groups–to pursue non-academic pathways to develop their frameworks and inquiries.[66] These are important voices in disabled communities, and it would be an incomplete project on disability to ignore those voices. Many of the now prominently used terms in the disability community came into being in these spaces, so at times I will be giving credit to those who originated those terms, and I will be incorporating ideas, questions, and experiences of the US healthcare system from these communities into my analysis.[67]

Anti-progressive Narratives and Better Worlds

I wrote at the beginning of this chapter that I find “The Ones Who Walk Away from Omelas” to be disquieting. I find it disquieting precisely because its focus is on the titular ones who leave the city, who use the plight of the child to motivate their own freedom from the city while doing nothing to improve the material conditions of the child.

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[66] For more information on the inaccessibility of academic institutions, see Jay Dolmage’s book *Academic Ableism: Disability and Higher Education* (2017) and Margaret Price’s book *Mad at School: Rhetorics of Mental Disability and Academic Life* (2011).

[67] As a note, I will only incorporate information from sources that can be verified as real and credible people who have a long history of publishing in these spaces.

While the narrator does not assign any identity to these dissidents beyond noting that both "men and women"[68] are among them, it would not be difficult to imagine such a dissident in the US to be a white progressive. While many white progressives publicly decry racism, sexism, ableism, and homophobia, they do not deeply interrogate the ways in which these ideas are enshrined in US capitalism and norms: "Which bodies are made to pay for 'progress'?"[69] The Omelans who leave the city are rejecting the paradigm of a child in the basement, but they can only leave because they are allowed to leave. They ignore the child the same way that the people who stay do.

The second quote at the beginning of this introduction provides a counterpoint to this conception of progress. While Terry Pratchett's speculative novel *Witches Abroad* has more in common with traditional fantasy than with the science fiction of many of the texts in this project, it is very concerned with what a "better world" looks like and the mechanisms of debilitation that are often employed to achieve it. The conflict in the novel stems from the progressive white witch Lilith's desire to transform the city of Genua–a city mostly populated by people of color–into a fairy tale kingdom. She accomplishes this agenda through methods of gentrification, exploitation, and debilitation, and she justifies these methods by propagating a social narrative that the people of Genua, even herself, play specific roles in fairy tale stories. Refusal to play the role according to the narrative results in torture and death.

Granny Weatherwax, the protagonist of the novel, is also a witch, but she counters Lilith's paradigm by espousing an anti-progressive narrative: "You can't go around building a better world for people. Only people can build a better world for people. Otherwise it's just a cage. Besides, you don't build a better world by choppin' heads off and giving decent girls away

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[68] Le Guin, "The Ones Who Walk Away from Omelas," 283.
[69] Puar, 13.

to frogs." Note here how Granny does not say that a better world is not possible, only that it cannot happen under a progressive paradigm: "progress just means bad things happen faster."[70] By rejecting the optimism that usually accompanies progressive narratives, Granny is able to effectively critique the mechanisms by which Lilith controls Genua–state sanctioned murder and heteronormativity. She emphasizes that only as a community can people build "a better world" through dismantling these mechanisms and taking responsibility for one another.

My hope for this project is to–like Granny–not to cynically dismiss all striving for a better future but to emphasize that a better future cannot exist without actively dismantling and interrogating the progressive narratives that promise equity and yet perpetuate violence and debilitation. Only by rejecting the progress which only gives us more of the same can we begin to imagine *otherwise*.

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[70] Pratchett, *Witches Abroad*, 257-58.

Interchapter: DIAGNOSIS

CW: ableist language, medical trauma, medical bias, references to racism, sexism, homophobia, transphobia

"Honestly, the day I was formally diagnosed with autism was a very good day. Because it felt like I had been handed the keys to the city of me. Because I was able to make sense of so many things that had only ever been confusing to me. Like why I could be so intelligent but struggle to leave any proof. Why I can't fill in forms. Why, why, I felt such a profound sense of isolation my entire life despite trying so hard to be part of the team."[71]

Years later, as a young adult, I was diagnosed with autism. What autism provided was a discursive framework, a lens through which others could story my life. My hand and full-body movements became self-stimulatory behaviors; my years-long obsession with maps and the Electric Light Orchestra became perseverations; my repetition of lines from the movie Airplane! became echolalia. My very being became a story, a text in dire need of professional analysis. This, my body, this was autism—and suddenly, with the neuropsychologist's signature on my diagnostic papers, I was no longer my body's author.[72]

The two quotations above illustrate two reactions to two autism diagnoses. The first is from Hannah Gadsby, a comedian who was diagnosed with autism in her late thirties. In this comedy routine, her diagnosis is self-revelatory and clarifying, a bringing together of what was undifferentiated data into a cohesive *Why*. The repetition of *why* in Gadsby's performance emphasizes the explanatory nature of her diagnostic narrative. An autism diagnosis is a narrative that elucidates an underlying medical or biological cause for her symptoms instead of a personal pathology or deviance, it makes her experience *real* in medical discourses.[73]

The narrative in the second response is less affirming. For Melanie Yergeau, an assistant professor at University of Michigan, their diagnosis as a young adult reflects their body as a text

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[71] Hannah Gadsby. "Douglas," Aired May 26, 2020, Netflix, https://www.netflix.com/title/81054700, 1:04:50-1:05:15.

[72] Melanie Yergeau, *Authoring Autism: On Rhetoric and Neurological Queerness* (Durham: Duke University Press, 2018), 1.

[73] In fact, many disabled or sick individuals who have this reaction to a diagnosis often say things like "I'm not crazy" or "It's not all in my head." While this attitude can somewhat stem from a denigration of mental illnesses or disorders (and the dismissal of those symptoms as "not real"), it also can stem from their experiences not being taken seriously by previous medical professionals, family members, teachers, or their workplace.

to be read by someone else. Despite the difference in tone, Yergeau's and Gadsby's accounts have a very similar structure in that they both list sensations and experiences that were previously unconnected. The diagnosis in both accounts transforms a draft of bodymind sensations into a coherent narrative of explainable symptoms, sensemaking out of perceived chaos, but, instead of the repeated *why*, Yergeau's repeats *became*. *Became* places the emphasis on the interpretative nature of the diagnostic narrative as opposed to the explanatory *why*, offering an interpretation of Yergeau's observed bodymind as an object, a text. The diagnostician, the neuropsychologist in Yergeau's case, becomes the storyteller of their experience, gaining an immense amount of discursive power over them in the process.

Why the variance in these two reactions to the same diagnosis? Yergeau and Gadsby provide us with two examples of seemingly disparate understandings of what diagnosis can be to the diagnosed. There are many more examples of each reaction (and numerous reactions that fall somewhere in between). Beyond the general reminder that disabled communities, like all communities, are not monolithic, the specific value of a diagnosis is relative to the individual or institution who interacts with it. A diagnosis of Crohn's might mean something different to the doctor who performs the diagnosis than to the patient diagnosed. It may mean something different to that patient's insurance company or to their family members or to their workplace. It may interact with the narrative of another diagnosis of cardiovascular disease, a comorbidity that changes the narrative of both diseases. A diagnosis that meant something thirty years ago may mean something very different now; it might even have two different meanings to the same person depending on context.[74] A diagnosis may be codified in the *International Classification of*

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[74] Despite their critiques of the diagnosis, Yergeau identifies as autistic. Many autistic members of neurodiversity movements proudly identify as autistic while contesting the constraints of the medical diagnosis.

Diseases (ICD)[75], but the social, cultural, and institutional meanings of that diagnosis shift in meaning and value temporally, spatially, and individually, creating complex yet unstable political categories within medical discourses.

In my own experience as a sick person, getting a diagnosis was extremely difficult but essential for accessing treatment. I was turned away by several doctors and nurse practitioners who merely told me that all the expensive tests they had run were negative for any pathology. When I pressed them for any explanation as to my pain, I was either told to take an over-the-counter treatment that I had taken many times before without success or I was told to try an elimination diet (without a referral to a nutritionist, which can be very dangerous). I was told to see a therapist. I was "too young" to be having these symptoms, and I am sure that I received a note in my file about "health seeking behavior."[76] When I finally did see a specialist who believed in my pain, she promptly gave me two co-diagnoses during my first appointment without performing a single test. I expected to feel relief, and in some ways, it was profoundly comforting, just as Gadsby's autism diagnosis was to her, to hear my pain named, acknowledged. However, I wasn't expecting the grief that came with the diagnosis, the realization that once my pain had been named that it would always be with me and that my body would never be healthy again. It has affected how I see my body and how others see it.

Despite all this instability, diagnosis still holds much rhetorical and actual power within US medical and health discourses. Diagnosis "demarcates the professional and institutional boundaries of social control and treatment system and authorizes medicine to label and treat

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[75] While psychiatric medical professionals have the *Diagnostic and Statistical Manual of Mental Disorders (DSM)*, now in its fifth edition, as the primary text for diagnosis of mental disorders or disabilities (colloquially known as the "bible" of psychiatry), medical professionals focused on the body lack a universal diagnostic text, although there have been calls in the last twenty years for more consistency. Most doctors learn clinical reasoning and diagnosis in medical school and residency, from their professors, textbooks, and clinical experiences. Medical students and residents also rely on resources such as the *UpToDate* database and the *Merck Manual* database.

[76] A note which, in and of itself, is a diagnosis.

people on behalf of society at large."[77] Many sociologists and laypeople have observed that diagnosis gives permission for patients to be ill: think of all the medical documentation teachers insist on reading before providing an accommodation to a sick or disabled student. If I ever do decide to ask for accommodation from an employer, which by law I can with my diagnosis, I will have to discuss private medical history with them and will in all probability have to provide my medical records and/or a letter from my doctor describing the severity of my illness and how it affects my day-to-day capacity. Knowing a diagnosis and proving that the diagnosis is *legitimate* provides the basis for how doctors treat patients and how the rest of the world interacts with sick and disabled people.

This interchapter will briefly contextualize and ruminate on how diagnosis conceptually works in medical discourses and popular depictions of those discourses. If "Diagnosis is the fulcrum of the medical narrative"[78] and the "fundamental explanatory act in medicine,"[79] then fully understanding how US medicine debilitates to commodify certain bodyminds requires a consideration of what kinds of knowledge produce diagnosis and what kinds of knowledge diagnosis produces.[80]

The Diagnostic Gaze

The word *diagnosis* comes from the Greek via the Latin: from *dia-* "between" and *gignoskein* "to learn or to come to know." *Diagnosis* then is "a discerning, distinguishing."

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[77] Phil Brown, "Naming and Framing: The Social Construction of Diagnosis and Illness," *Journal of Health and Social Behavior* Extra Issue (1995): 39, https://doi.org/10.2307/2626956.

[78] Annemarie Jutel. "Sociology of diagnosis: a preliminary review," *Sociology of Health Illness* 31, no. 2 (2009): 278, doi: 10.1111/j.1467-9566.2008.01152.x.

[79] Mara Buchbinder, *All in Your Head: Making Sense of Pediatric Pain* (Oakland: University of California Press, 2015), 9, https://www.jstor.org/stable/10.1525/j.ctt14qrz7g.6.

[80] Although it is important to note, as Buchbinder does, that diagnosis as a concept varies across cultures and medical disciplines, 9. This interchapter will primarily focus on the concept as it is understood in US medical discourses and popular culture.

While much discursive emphasis is placed on the learning or knowing of the diagnostic gaze, the *dia-* prefix indicates that importance also resides in the discursive separation that knowledge creates. Diagnosis creates the spaces between ill and well, disabled and abled, one kind of sick and another kind of sick. In fact, diagnosis "provides structure to a narrative of dysfunction, or a picture of disarray, and imposes official order, sorting out the real from the imagined, the valid from the feigned, the significant from the insignificant."[81] In the same way, diagnosis also creates spaces between different kinds of bodymind experiences—on "scales according to their deviation from the norm."[82] Even in the comparison, the categorizing language creates spaces between the scales: the spaces between infection and disorder, between illness and disability, between syndrome and disease, between mental illness and physical disability, allow for the formation of discrete categories of difference in relation to the norm, creating systems of value dependent on how close the category is to the healthy or abled body.

Medical discourses rely on the creation of these discursive spaces as a classification of knowledge about the human bodymind, an ontological database as it were. This database represents a deployment of Certeau's concept of *strategy*, "a specific type of knowing, one which upholds and determines the giving itself a proper place."[83] This *knowing* depends on the creation of a place from which to know and an "*exteriority*" of things to know. Although Certeau's focus here is on the strategic transformation of "the uncertainties of history into readable spaces" by institutionalized power,"[84] medical discourse focuses on the strategic transformation of unruly and differentiated human bodies into readable spaces: diagnosis is one such strategy that creates a place from which to know the body and mind (the medical-industrial complex) and to create

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[81] Jutel, 279.
[82] Jay Dolmage, 37.
[83] Michel Certeau et al. "On the Oppositional Practices of Everyday Life," *Social Text* 3, no. 1 (1980): 5.
[84] Certeau et al., 5.

and recreate it into discursive spaces. This place of knowing allows diagnosis as a strategy the power to weigh certain diagnoses as more favorable than others. A diagnosis of a sinus infection in an otherwise healthy, abled person, for example, is considered less pathological (because a sinus infection is a temporary and easily treatable condition, and the patient will generally return to the normative position) than a diagnosis of autism (because autism, in a medical model, is a lifelong communication disorder that significantly deviates from the normative position). These systems determine access to medical resources, health insurance, treatment plans, work benefits/accommodations, and political and social capital, among other things.

It is important to underline the role of *the gaze* of the diagnostician in this strategy of reading bodies. European and US medicine since the beginning of the nineteenth century has increasingly relied on empirical or positivist epistemologies, privileging the observable. The visible, the seen, becomes synonymous with natural reality, pure objectivity from visible signs: think of Haraway's "god trick of seeing everything from nowhere."[85] This objectivity provides diagnosis its strategic authority to read and classify bodies, but as with all strategies employed by institutions of power, it must have a place from which to read and classify. Foucault argues that the centrality of the medical gaze in the clinical encounter obscures the ways in which this construction reorganizes and even re-articulates what is in the realm of medical knowledge.:

> The clinic—constantly praised for its empiricism, the modesty of its attention, and the care with which it silently lets things surface to the observing gaze without disturbing them with discourse—owes its real importance to the fact that it is a reorganization in depth, not only of medical discourse, but of the very possibility of a discourse about disease. The *restraint* of clinical discourse (its rejection of theory, its abandonment of systems, its lack of a philosophy; all so proudly proclaimed by doctors) reflects the non-verbal conditions on the basis of which it can speak: the common structure that carves up and articulates what is seen and what is said.[86]

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[85] Donna Haraway, *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991), 189.

[86] Michel Foucault, *The Birth of the Clinic* (New York: Vintage Books, 1994), xix.

The medical gaze, then, aspires to pre-exist discourse and yet it is situated within temporal and spatial constructions of knowledge.[87] The diagnostician must know what healthy tissue looks like and what diseased tissue looks like before they can examine the patient, but they can only know this within the contemporary context of medical knowledge. Hannah Ebben defines this as *recognition*: “Recognition solely refers to the social expectation of signs of deviance in people, and the anticipation of such signs as discernible in the clinical world and in society as a whole.”[88] Recognition then is an essential mechanism for the medical gaze, recognition of the normal vs the abnormal.[89] But from whence does this recognition originate?

While Foucault describes the term *medical gaze*—most likely to emphasize the ways in which this gaze forms the basis of all medical discourse even as it seeks to disentangle itself from discourse—I substitute *diagnostic* for *medical*. Foucault is interested in the historical shift from the early nineteenth century philosophy of medicine to the early twentieth century empiricism; I am interested in the emergence of twenty-first century medicine and its accompanying industries that have become increasingly reliant on the diagnostic separation of political and social entities created by the gaze. These political and social entities created by the diagnostic gaze are unstable and shift constantly, further destabilizing the empirical aspirations of medicine as a discipline. The classification of homosexuality as a psychiatric disorder in the *DSM-III* infamously represents the relationship between social and medical discourses, but it is certainly not an isolated case.[90] Hysteria, frigidity, and melancholia all seem laughable now as

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[87] Alan Bleakley, *Thinking with Metaphors in Medicine: The State of the Art* (New York: Routledge, 2017), 46. Bleakley best illustrates the practical application of this refusal to acknowledge the discursive preconditions of the medical gaze in way medical discourse often claims to be objective and empirical and yet uses countless metaphors for disease and the human body (he cites “illness as war” and “body as machine” as two particularly foundational medical metaphors).

[88] Hannah Ebben, “The Desire to Recognize the Undesirable: De/Constructing the Autism Epidemic Metaphor and Contagion in Autism as a Discourse,” *Feminist Formations* 30, no. 1 (2018): 144, doi: 10.1353/ff.2018.0007.

[89] Foucault, *The Birth of the Clinic*, 9.

[90] Jutel, “Sociology of diagnosis: a preliminary review,” 281.

diagnoses, but even today, diagnostic criteria are constantly being updated, re-evaluated, combined, differentiated, and re-named. Obesity is defined as "a chronic disease that is increasing in prevalence in adults, adolescents, and children and is now considered to be a global epidemic" in the *UpToDate* database,[91] and yet the relationship between fat and health is clearly culturally, and temporally, situated—and many recent studies have brought into question the relationship between weight and health.[92] Deficits in social communication, an essential criterion for an autism diagnosis, are situated within cultural and historic norms such as the importance of eye contact in US social customs. The diagnostic gaze derives its power from its aspirations to empirical objectivity, but it must always exist within social and cultural discourses.

The diagnostic gaze is not just human either anymore: it is cyborg. There have never been as many ways to read or classify the human body, and there have never been as many treatments developed around different diagnoses. The rapid development of testing and imaging technology over the past century has created new and numerous ways for the diagnostic gaze to read the body, ways only possible by autopsy in previous centuries. The body no longer hides its signs but speaks "in a variety of machine languages."[93] Diagnosis is increasingly being done by machines or by technicians who are trained to read the data the machines provide, without ever meeting the patient or engaging in the clinical encounter. These machine languages often objectify the body more by disassociating it from the lived experiences of the patient into a representation of signs: "the patient vanishes behind the computer screen where his body is

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[91] Joseph A. Skelton and William J. Klish, "Definition, epidemiology, and etiology of obesity in children and adolescents," *UpToDate,* last modified October 6, 2020, https://www.uptodate.com/contents/definition-epidemiology-and-etiology-of-obesity-in-children-and-adolescents?search=obesity&topicRef=5861&source=see_link.

[92] See J. P. Rey-López et al. "The prevalence of metabolically healthy obesity: a systematic review and critical evaluation of the definitions used," *Obesity Review* 15, no. 10 (2014): 781-90, doi: 10.1111/obr.12198, and Guo Fangjian and W. Timothy Garvey, "Cardiometabolic disease risk in metabolically healthy and unhealthy obesity: Stability of metabolic health status in adults," *Obesity* 24, no. 2 (2015): 516-25, doi: 10.1002/oby.21344.

[93] Drew Leder, "Clinical interpretation: the hermeneutics of medicine," *Theoretical Medicine* 11, no. 1 (1990): 15.

analysed based on the biomedical factors."[94] Imaging machines or laboratory equipment now have a diagnostic gaze which is merged with the gaze of the diagnostician as they read the output.

Medical and technological discourses have merged considerably over the past century. This merging has occurred primarily in two ways: the first is the literal integration of medical language in computer science discourse and vice versa. A *diagnostic* program in the computer sciences is a program designed to identify the operational status of various software and hardwires. In the early days of computers, diagnostic programs were actually procedures run by humans on computers, mimicking the clinical encounter that Foucault describes. Meanwhile, medical diagnosticians use *algorithms* in order to arrive at a diagnosis. Historically, these diagnostic algorithms have represented problem-solving processes or checklists that diagnosticians completed, but within the last fifty years, doctors and scientists have begun developing and using artificial intelligence within the diagnostic process. Input all the information into an AI program like ESAGIL or Diagnosis Pro and theoretically, if you have given the program all the relevant information, the output will be an accurate diagnosis. Diagnosticians must learn to read the body through these machine languages, and new specialties and fields have developed as the need for medical technicians grows.

The second way that medical and machine discourses have merged occurs through the use of machine metaphors for the human body. These metaphors are used in both medical texts and popular depictions of medical diagnosis: the heart as a pump, the brain as a computer, the nervous system as circuitry, etc. As computing technology develops more and more sophisticated AI, the comparisons between computers and humans—especially the human brain—have

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[94] Ioana Silistraru, "Narrative Medicine – the methodology of doctor-patient communication analysis," *Social Change Review* 15, no. 2 (2017): 105, doi: 10.1515/scr-2017-0005.

become metaphors in both fields. *Hardware* and *software* are both terms used to describe the body and the brain impulses in medical discourses.[95] Even pseudoscientific approaches that reject traditional medical discourses, like those certified by the International Christian Association of Neurodevelopmentalists (ICAN), use computer terminology to describe how the brain works: "Often we are testing for output without accurately inputting the instruction precisely."[96] Bleakley suggests that these metaphors are a legacy of Cartesian division of the body and the mind, but traces the concept of reducing bodies to "mechanical or engineering metaphors" back to medical texts in the sixteenth century. [97] He suggests that these metaphors draw their medical power from its abstraction of the body from the patient as an entire person: "Bracketing out the difficult bits such as the mind and emotions—or leaving these to the oddballs, the psychiatrists—reduces the person to the body, the body to machine (albeit complicated), and the machine to related parts….Sick bodies are a product of broken parts, often able to be mended; and sick minds a product of faulty wiring and then malfunctioning software."[98] This desire to metaphorize the human body as a machine may stem from a need for the possibility of "fixing" broken bodies as Mara Buchbinder argues,[99] but it also stems from the need for the diagnostic gaze to reduce the patient to their body. This need, Foucault argues, is necessary for the gaze: "In order to know the truth of a pathological fact, the doctor must first abstract the patient," in order to eliminate subjectivity in favor of empirical facts.[100] The inclusion of literal machines into the body in the form of pacemakers, hip replacements,

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[95] See Chapter One for more discussion on the ways in which the philosophies of the human brain have been metaphorized in computer science discourses.

[96] Linda Kane, "The Neurodevelopmental Approach to Development," accessed March 17, 2021, https://www.hope-future.org/the-neurodevelopmental-approach-to-development.html.

[97] Bleakley, *Thinking with Metaphors in Medicine: The State of the Art*, 56.

[98] Bleakley, *Thinking with Metaphors in Medicine: The State of the Art*, 55.

[99] Mara Buchbinder, *All in Your Head: Making Sense of Pediatric Pain*, 7.

[100] Foucault, *The Birth of the Clinic*, 8.

prosthetic limbs, cochlear implants, and other medical devices blurs the lines even more between metaphor and actuality, furthering the cyborg nature of the diagnostic gaze. Not only is the gaze part human, part machine, but the gazed-upon is also part human, part machine, if only metaphorically.

The Diagnostic Narrative

Narrative also gives diagnosis its strategic power along with classification. It is a narrative of an interaction between a diagnostician and a patient, a medical narrative of the process of clinical reasoning: “the narrating impulse remains entrenched in the act of diagnosing unto itself: traits and checkboxes tell a story.”[101] The diagnostic narrative first requires recognition of deviance as its exigence. A person does not generally seek medical assistance unless they themselves or others[102] have identified some part of their experience as deviant from the norm (this deviance is often referred to colloquially as *symptoms*) and that this deviance falls under the purview of medical discourses.[103] Once the patient has initiated the narrative, they generally give an accounting of the perceived deviance through a retelling of the history of the symptoms.

Many sociological descriptions of this narrative describe the diagnostic process as a collaboration between the patient/patient’s bodymind and the diagnostician.[104] The patient describes the signs or symptoms they have identified as deviant, translating “these physical

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[101] Yergeau, *Authoring Autism: On Rhetoric and Neurological Queerness*, 1-2.

[102] Medical sociology texts have not always examined the role that guardians, family members, or others often leverage their roles to gain a diagnosis for the patient, who may be an unwilling participant in the process, especially if they are a minor or a dependent.

[103] Leder, “Clinical interpretation: the hermeneutics of medicine,” 12; Jutel. “Sociology of diagnosis: a preliminary review,” 287.

[104] See Leder; Jutel.

experiences into language, the patient seeks to define their sequence, articulate their crucial features, weave out of events a continuous plot.[105] It is the diagnostician's role to read and interpret both this narrative history within the context of their medical experience and knowledge: "the doctor interrogates, interprets, and retells the story, establishing the 'plot' and a diagnostic organization."[106] In a way, the patient is presenting the doctor with a hypothesis, a potential disease, and the doctor tests that hypothesis against a reading of the physical signs and their own experience and medical knowledge.

Simultaneous and subsequent to the patient history, the diagnostician reads the patient's bodymind as a text. Leder describes the way the diagnostician reads the patient's bodymind as "scientific *object*: a mass of cells, tissues, and organs. Here then is the text of the physical exam. Symptoms give way to physical signs, the 'subjectivity' of the patient to the 'objectivity' of visible lesions."[107] Notice the transmutation of symptoms to signs in Leder's description: symptoms represent the hypothetical, the unsubstantiated sensations described by the patient. Signs represent visible evidence that can be analyzed, organized, and interpreted by the diagnostic gaze. Leder argues that the diagnostician, by converting symptoms into signs, is conveying meaning to the patient's narrative through their knowledge and ability to view the patient's body.[108] Foucault argues that this process allows the diagnostician to disregard the patient's lived-experience in favor of a more purely objective narrative.[109] In either case, the ability to read the signs presented by a patient's body becomes the primary focus on the diagnostician.

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[105] Leder, "Clinical interpretation: the hermeneutics of medicine," 13.
[106] Jutel. "Sociology of diagnosis: a preliminary review," 287.
[107] Leder, "Clinical interpretation: the hermeneutics of medicine," 14.
[108] Leder, 12.
[109] Foucault, *The Birth of the Clinic*, 8.

During the process, the doctor will often have what is referred to as a working diagnosis. Differential diagnosis represents a deductive form of clinical reasoning: the diagnostician starts with several diagnostic possibilities and proceeds to rule out the ones whose diagnostic criteria are not met by the signs presented by the body, generally starting with the ones that are considered more dangerous and life-threatening. Many medical diagnostic texts include a differential diagnosis section to indicate a set of diagnoses that may provide a narrative explanation for the signs presented.[110] The diagnostician must rule out ones that do not fit the signs and choose one that does. The diagnosis reveals what the doctor believes is the underlying cause for the signs, narrativizing the signs and giving the narrative a name. This is the climax of the diagnostic narrative, the affixing of a diagnosis to the bodymind, a naming, a categorization, the strategic separation of the patient's bodymind from the norm.

Detective Work: (Mis)Reading Bodies

The narrativization of diagnosis within medical discourses has lent itself to numerous literary and popular culture representations. Cultural and social constructions of diagnosis often are transmitted through popular culture, most prolifically and enduringly through the medical drama genre on television. Medical dramas are often the first contact that many nonprofessional viewers have with medical discourses: "these hit shows do not only exist as products of American culture, they are also active producers of the social context in which they are

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[110] For example, the *UptoDate* database's entry on "Clinical Manifestations, diagnosis, and prognosis of Crohn's disease" lists Infectious colitis, Ulcerative colitis, Diverticular colitis, Celiac disease, Irritable Bowel syndrome, lactose intolerance, and other disorders as presenting similarly to Crohn's Disease. Mark A. Peppercorn and Sunada V. Kane, "Clinical Manifestations, diagnosis, and prognosis of Crohn's disease," *UpToDate*, last modified November 30, 2020, https://www.uptodate.com/contents/clinical-manifestations-diagnosis-and-prognosis-of-crohn-disease-in-adults?search=%E2%80%9CClinical%20Manifestations,%20diagnosis,%20and%20prognosis%20of%20Crohn%E2%80%99s%20disease%E2%80%9D&source=search_result&selectedTitle=1~1&usage_type=default&display_rank=1.

created."[111] In this genre, diagnosis is most often viewed through the lens of detective fiction: the diagnostician becomes a sleuth that sorts through a collection of evidence to solve the illness/crime. The application of detective tropes to diagnostic narratives can perhaps be best seen in the television series *House*[112] (2012-2019). The series focuses on a famous though dysfunctional infectious disease specialist, Gregory House (played by Hugh Laurie) who, with a team of experts, diagnoses patients with illnesses and diseases that have baffled other diagnosticians. Each episode focuses on one patient, with most episodes ending with a successful diagnosis.

Much has been written about *House* writer David Shore's use of Sherlock Holmes tropes in the series, from House's brilliant deductive reasoning skills to his dysfunctional and contentious relationships with his colleagues. Less has been said about the impact the detective lens has on viewers' understanding of the diagnostic process. House routinely refuses to meet the patients he is working to diagnose in person, citing the unreliability of patient first-hand accounts. If House has a catch-phrase in the series, it is "Everybody lies." In the pilot episode, he professes extreme disdain for patients to a colleague: "Doctors treat illnesses, not patients, and if you don't talk to them, they can't lie to us."[113] This antagonistic relationship between doctor and patient reflects a trope of detective fiction: the jaded detective's mistrust of his client. Patients become suspects in this paradigm of diagnosis, and illnesses become cases—the diagnostic gaze becomes a suspicious one, trusting nothing but the empirical "clues" or symptoms that the

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[111] Gesine Wegner, "Relocating the Freak Show: Disability in the Medical Drama," *Zeitschrift für Anglistik und Amerikanistik* 67, no. 1 (2019): 20, doi: 10.1515/zaa-2019-0003.

[112] Also known as *House, M.D.*

[113] *House*, season 1, episode 1, "Pilot," directed by Bryan Singer, written by David Shore, featuring Hugh Laurie, Robert Sean Leonard, Jesse Spencer, Jennifer Morrison, aired November 16, 2004, https://www.amazon.com/gp/video/detail/amzn1.dv.gti.88a9f6fb-b2c4-65a4-43c7-17864dcb0f5d?autoplay=1&ref_=atv_cf_strg_wb.

body/crime scene reveals. The climax of the diagnostic narrative is when the diagnostician solves the diagnosis like a detective solves a crime.

House is by no means represented to the viewer as a paragon of medical or ethical virtue (in fact, he is often berated by both his boss and his team for his terrible bedside manner and dysfunctional personal relationships), but this distrust of patient accounts can be found in medical diagnostic texts as early as the nineteenth century. Johnathan Gillis, in tracking these attitudes towards patient history in medical texts over the last two centuries, concludes that the patient account has been and still often considered only valuable in so far as it can be interpreted by the diagnostician:

> There are thus two patient histories: a superficial, overt, story presented by the patient or parent, and a deep, covert, and 'true' history revealed by the technique and artistry of the physician. The patient history has therefore been consistently a construct and production of the clinical encounter, rather than a simple expression of the patient's narrative."[114]

Medical students have then been historically encouraged to focus the diagnostic gaze on objective signs while rummaging for facts in the subjective and suspect accounts of their patients.[115] Almost a hundred years before House's debut on television, Gillis notes that doctors like John Musser in 1904 were characterizing the diagnostician as a "searcher for truth" and "capable of discerning the truth and discarding the false."[116] Patients were not just untrained and inexperienced: they could be deceitful, hyperbolic, and sensitive, and worse, they could self-diagnose.

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[114] Jonathan Gillis, "The History of the Patient History since 1850," *Bulletin of the History of Medicine* 80, no. 3 (2006): 491, doi:10.1353/bhm.2006.0097.

[115] See Gillis and Abraham Verghese et al., "A history of physical examination texts and the conception of bedside diagnosis," *Transactions of the American Clinical and Climatological Association* 122 (2011): 290-311, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3116347/.

[116] John Musser, *A Practical Treatise on Medical Diagnosis*, 5th ed. (Philadelphia: Lea Brothers, 1904), 51–52, quoted in Gillis, "The History of the Patient History since 1850," 492.

The skepticism of the diagnostician towards patient accounts continues in contemporary medical texts, often in remarkably unchanged ways. Buchbinder describes diagnosticians who "read the body for signs that may help them distinguish between patients with real and 'unreal' pain—that is, pain that is taken to be nonexistent or made up."[117] When test after test comes back negative, as in my personal experience, doctors often begin to dismiss pain as psychological or worse. On the *Merck Manual* website, the entry on "Functional Gastrointestinal Illness," one of my diagnoses, explicitly links certain psychiatric disorders like anxiety disorders and hypochondria to functional GI symptoms: "Psychologic theories hold that some functional symptoms may satisfy certain psychologic needs. For example, some patients with chronic illness derive secondary benefits from being sick. For such patients, successful treatment of symptoms may lead to development of other symptoms." This entry dismisses patient histories of pain in favor of a characterization of the patient as "needing" the chronic illness. In the next paragraph, the entry urges physicians to wait to prescribe treatment for "inexplicable complaints because this may promote symptom anxiety and health-seeking behavior."[118] This distrust of the patient comes from the abstraction of disease. The diagnostic gaze must not only read the patient's bodymind for signs of pathology, but it must also read their character as well.

Socioeconomic factors have certainly played into the pitting of diagnosticians against patients. Assemblages of race, gender, sexuality, class, disability, and age bring their own narratives into the patient-diagnostician interaction. Diagnoses can be withheld based on these factors as well—and by extension, medical resources. The unstable nature of diagnosis becomes apparent here: although the disease has been abstracted from the body, notions about certain

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[117] Buchbinder, *All in Your Head: Making Sense of Pediatric Pain*, 10.

[118] Stephanie M. Moleski, "Functional Gastrointestinal Illness," last modified October 2019, https://www.merckmanuals.com/professional/gastrointestinal-disorders/approach-to-the-gastrointestinal-patient/functional-gastrointestinal-illness.

kinds of bodies still linger in the construction of the diagnosis. Nearly all diagnoses of autism are given to white male children; autistic women and people of color are often misdiagnosed or not diagnosed at all.[119] Fatphobia is rampant among exercise and nutritional specialists.[120] Women are less likely to receive pain medication than men, and their pain is more likely to be attributed to a psychological or emotional source than a man's pain.[121] Pregnant Black and Indigenous women are less likely to receive life-saving medical treatment than their white counterparts.[122] Overall, Black patients are less likely to receive pain medication than white patients. The same study found that white medical students and residents often hold deeply ingrained stereotypes about black bodyminds that impact their medical decisions.[123] Trans people are refused medical treatment in large numbers, and many have experienced some form of violence in a medical setting.[124] Even machine languages hold bias. One recent study found that the algorithms used by Boston area hospitals to determine which patients are placed on the kidney transplant list are

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[119] Lisa D. Wiggins et al. "Disparities in Documented Diagnoses of Autism Spectrum Disorder Based on Demographic, Individual, and Service Factors," *Autism Research* 13, no. 3 (2019): 470, doi: 10.1002/aur.2255, and Sarah Dababnah et al. "'We Had to Keep Pushing': Caregivers' Perspectives on Autism Screening and Referral Practices of Black Children in Primary Care," *Intellectual and developmental disabilities* 56, no. 5 (2018): 322, doi: 10.1352/1934-9556-56.5.321.

[120] G.A. Panza et. al. "Weight bias among exercise and nutrition professionals: a systematic review," *Obesity Reviews* 19, no. 11 (2018): 1492, doi: 10.1111/obr.12743.

[121] Diane E. Hoffmann and Anita J. Tarzian. "The Girl Who Cried Pain: A Bias Against Women in the Treatment of Pain," *Journal of Law, Medicine & Ethics* 29 (2001): 13–27, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=383803.

[122] Emily E. Petersen et al. "Racial/Ethnic Disparities in Pregnancy-Related Deaths — United States, 2007–2016," *Morbidity and Mortality Weekly Report* 68, no. 35 (2019): 763, doi: 10.15585/mmwr.mm6835a3.

[123] Hoffman et al's study finds that many of the white students and residents believes that Black patients feel less pain than white patients; that Black patients have thicker skin than white patients; and that Black patients' blood coagulates more quickly than white patients; etc., and that these beliefs impact their diagnosis and treatment plans. Kelly M. Hoffman et al. "Racial bias in pain assessment and treatment recommendations, and false beliefs about biological differences between blacks and whites," *National Academy of Sciences* 113, no. 16 (2016): 4296, doi: 10.1073/pnas.1516047113.

[124] Jamie M. Grant et al., *National Transgender Discrimination Survey Report on Health and Health Care* (Washington D.C: The National Center for Transgender Equality and the National Gay and Lesbian Task Force, 2010), 5-6.

more likely to refer white patients for kidney transplants while Black patients are more likely to be scored as healthier (and not in need of a transplant).[125]

These biases have deadly consequences: in 2021, a Black man died in a hospital parking lot after the ER medical practitioners sent him home three times with only Ibuprofen for his severe chest pain and difficulty breathing. On the third occasion (shortly before his death), when asked by the man's wife why they would not admit him, the medical professionals reportedly told her that "he's already been here twice and we have already diagnosed him."[126] Diagnosis, in this case, seems to have denied him access to resources, but how much of his diagnosis was due to the internalized bias of the medical professionals against Black men seeking medical attention?

Diagnosis is used as a tool to police Black men outside of an explicitly medical context as well: excited delirium is a diagnosis cited by many police and government officials in the US when defending the use of excessive force, especially in cases of excessive force against Black men. Notably in 2020, the Washington Post cited the use of the excited delirium diagnosis in the cases of the murders of George Floyd, Elijah McClain, and Manuel Ellis, among many others.[127] Excited delirium purports to describe a condition in which a patient (often as the result of suspected cocaine use) becomes agitated and then suddenly dies. The diagnosis has controversial and mostly debunked origins and is highly debated within medical communities.[128] In a 2018

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[125] Salman Ahmed et al. "Examining the Potential Impact of Race Multiplier Utilization in Estimated Glomerular Filtration Rate Calculation on African-American Care Outcomes," *Journal of General Internal Medicine* 36 (2021): 464, doi: 10.1007/s11606-020-06280-5.

[126] Ashli Lincoln. "St. Peters father dies in hospital parking lot after family says hospital refused treatment," *KMOV*, January 30, 2021, https://www.kmov.com/news/st-peters-father-dies-in-hospital-parking-lot-after-family-says-hospital-refused-treatment/article_877c7a4a-61cf-11eb-b4f8-23406ce38421.html?utm_medium=social&utm_source=twitter&utm_campaign=user-share

[127] Méabh O'Hare, Joshua Budhu and Altaf Saadi, "Police keep using 'excited delirium' to justify brutality. It's junk science," *The Washington Post*, July 17, 2020, https://www.washingtonpost.com/outlook/chokehold-police-excited-delirium/2020/07/17/fe907ec8-c6bc-11ea-b037-f9711f89ee46_story.html.

[128] O'Hare et al.

review of the medical literature on excited delirium, the reviewers observed that there is a lack of a cohesive definition of excited delirium as a diagnosis and the most cited symptoms are "hyper aggressive behavior with superhuman strength and a combative attitude toward the police, hyperactivity, bizarre behaviors, unusual pain tolerance, and hyperthermia,"[129] symptoms that have racist connotations. The review also found that the studies almost predominantly focused on small sample sizes of young Black men and are often "based on clinical subjective criteria."[130] This diagnosis is not recognized by many of the most reputable medical organizations, and yet it is still used to lend medical credibility, the objectivity of empiricism, to the police strategy of racism and systemic bias in the US, further cementing the relationship between detective work and the diagnostic gaze.

Medicalization, Cinematic Gaze, and Self-Diagnosis

Much more has been and could be still said about diagnosis as an epistemological and ontological cornerstone of medicine; this interchapter is by no means an exhaustive examination. Instead, I would like to conclude this section by introducing three ways in which the diagnostic gaze has shaped public health discourse in order to pose some questions that will be explored in the next chapter.

The first way the diagnostic gaze has infiltrated public health discourses is through an overall awareness of increased medicalization in the US. During the Q&A portion of a Popular Culture Association conference panel I attended in 2019, a fellow member of the audience, a public high school teacher, decried a perceived increase in psychiatric diagnoses among students:

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[129] Philippe Gonin, et al. "Excited Delirium: A Systematic Review," *Academy Emergency Medicine* 25, no. 5 (2018), 562, doi: 10.1111/acem.13330.
[130] Gonin, et al. 561-562.

"they are all on ADHD meds! Most of them are just kids!"[131] This idea that what was once considered non-medical is rapidly becoming medicalized in the US is not a new one: the term *medicalisation*[132] was first used by Irving Zola in 1972 to describe the process by which certain behaviors or bodies can be declared "a medical problem."[133] Concerns about medicalization range widely across ideological and political viewpoints. Some critics argue that medicalization can be used to discursively reclassify socially deviant behavior into a medically treatable disease through the process of diagnosis.[134] Others have argued that medicalization represents the commodification of the medical field: the more people who are sick, the more treatments, medical devices, medications, and services can be marketed to them, thus creating the medical industrial complex.

Still others see medicalization as a threat to public health. Allen Frances, one of the contributing authors of the *DSM-IV*, has been a vocal critic of the subsequent *DSM-V*, writing a book entitled *Saving Normal: An Insider's Revolt against Out of Control Psychiatric Diagnosis, DSM-V, Big Pharma, and the Medicalization of Ordinary Life*. In this book, Frances argues that medicalization of the mental health field has resulted in the over prescription of medication, the emergence of "false epidemics" of mental disorders such as autism, and the misallocation of resources that should be reserved for the "truly ill."[135] He writes, "Normal is losing all purchase if only we look hard enough perhaps everyone will eventually turn out to be more or less

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[131] Jamie L. Mcdaniel, Alyssa Chrisman, Robin E. Field, Christopher Todd Boucher, and Megan McDonough, Panel Discussion, Popular Culture Association Conference, April 18, 2019, Hoover, Wardman Park Marriott, Washington DC.

[132] Zola's spelling.

[133] Irving Kenneth Zola, "Medicine as an institution of social control," *The Sociological Review* 20, no. 4 (1972): 495, doi: 10.1111/j.1467-954X.1972.tb00220.x.

[134] see Jutel; Zola; and Peter Conrad and Joseph W. Schneider, *Deviance and Medicalization: From Badness to Sickness* (Philadelphia: Temple University Press, 1992).

[135] Allen Frances, *Saving Normal: An Insider's Revolt against Out of Control Psychiatric Diagnosis, DSM-V, Big Pharma, and the Medicalization of Ordinary Life* (Harper Collins, 2013), 3.

sick."[136] For Frances—and many others—medicalization blurs the "between" inherent in the diagnostic system, destabilizing the knowledge base of medicine as it is currently understood. The debate over medicalization raises an important question for the next chapter: what is the relationship between medicalization, increased screening, and diagnosis?

Secondly, I would like to revisit the relationship between the cinematic gaze and the diagnostic gaze. While scholars like Wegner have drawn the connection between the medical drama genre and the freak show exhibitions of the late nineteenth and early twentieth centuries,[137] I would say that these shows do not just invite us to stare at sick and disabled bodies (although they certainly do), they invite us to diagnose them. Popular depictions of diagnosis in medical dramas such as *House* often try to include the audience in the diagnostic process, much like a good whodunit will try to give the audience all the clues to solve the crime. There is a melding of the diagnostic gaze and the cinematic gaze in these texts: a rash, a cough, erratic behavior all become subject to analysis by the viewer as well as the diagnostician character. It is easy for the gaze to be engaged in this way; in our most recent rewatch of *Grey's Anatomy*, my partner and I found ourselves trying to decide if the key to a mysterious illness was the patient's lunchbox she had inherited from her father ("what if it is lined with lead?").

Medical dramas are far from the only genre to invite the diagnostic gaze of the viewer: think of how often a woman vomiting in television and film narratives invites the viewer to ask if she is pregnant. Think of how often a character who refuses to meet another character's eyes is often coded as autistic or "on the spectrum" or someone who lies in bed in the dark is depressed.[138] This melding of the cinematic gaze with the diagnostic gaze, combined with the

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[136] Frances, 3.
[137] Wegner, "Relocating the Freak Show: Disability in the Medical Drama," 21.
[138] The first few episodes of the popular TV series *Hannibal* give us this coding in the character of Will Graham.

increase in medicalization in public health discourses, generates public awareness and attention to diagnosis in general. So-called advocacy groups such as Autism Speaks have begun to promote increased public screening,[139] and the rise of sharable and accessible medical websites like WebMD encourage the formation of a medical panopticon in which everyone watches each other for signs of illness or disability, all in the name of early prevention. While medical professionals urge the importance of medical training and experience in diagnosis, this surge in public access to diagnostic criteria combined with hyper-awareness of the importance of diagnosis prompts another question for the next chapter: how does the melding of the cinematic and diagnostic gaze represent forms of disciplinary power?

Lastly, while the diagnostic gaze can thus be entangled with public health discourses, it has also been reclaimed by many individuals and activists as a tactic to resist medical discourses. This process has been done by turning the gaze inward: self-diagnosis. As mentioned earlier, self-diagnosis by patients has been and continues to be disparaged and decried by many medical practitioners. However, self-diagnosis provides a power and is often the only available resource for those without access to medical personnel (see HEALTHCARE).[140] This may represent the opposition of tactics to strategy, as Certeau argues. While strategy represents the manipulation of discourses by institutionalized power, tactics represents the oppositional forces employed by those subject to strategic discourse. Tactics rely on an emphasis of time over readable space, creating and exploiting the slippage between those spaces.[141] When applied to a medical-industrial complex such as the one in the US currently, the medical strategy of the diagnostic

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[139] As of the writing of this book, one prominent tab on the homepage for the *Autism Speaks* website reads "Learn the Signs: One of the most important things you can do." "Home," *Autism Speaks*, accessed March 5, 2021, https://www.autismspeaks.org/.

[140] Of course, self-diagnosis does not provide access to the same resources that diagnosis does.

[141] Certeau et al., "On the Oppositional Practices of Everyday Life," 5.

gaze is resisted and transformed through the situated knowledge and everyday lived experiences of the patient. Self-diagnosis represents just one of these tactics, a way of reclaiming the diagnostic gaze by those who are normally subject to it, bringing us to the third question that the next chapter will attempt to explore: what role does self-diagnosis play in narratives about disability, real or fantastic?

I will close this interchapter by introducing the sibling term for diagnosis that has been lurking in the background of this interchapter: prognosis. Prognosis shares the Greek root *gignoskein* with diagnosis but swaps out the liminal prefix *dia-* for the more predictive *pro-*: “to know beforehand” or “foreknowledge.” Prognosis in a medical context means a prediction of the likely course of a disease or illness, shifting the narrative temporally from the present to the future. Every diagnosis has a prognosis, the diagnostic gaze looks toward the future to plot the trajectory of the narrative towards renewed health or further debilitation, comedy or tragedy.

Chapter One: Do Androids Dream of Neuroatypical Sheep?

CW: ableist language, slurs, medical trauma, sexual assault, brief references and descriptions of hate crimes and hate speech

"Nothing is more punitive than to give a disease a meaning— that meaning being invariably a moralistic one. Any important disease whose causality is murky, and for which treatment is ineffectual, tends to be awash in significance. First, the subjects of deepest dread (corruption, decay, pollution, anomie, weakness) are identified with the disease. The disease itself becomes a metaphor. Then, in the name of the disease (that is, using it as a metaphor), that horror is imposed on other things. The disease becomes adjectival."[142]

"They started calling us Computers. People began vanishing – and the Cleaning began. You were dirty if you looked different. You were dirty if you refused to live the way they dictated. You were dirty if you showed any form of opposition at all."[143]

I begin this chapter with a consideration of one of the three questions posed at the end of the DIAGNOSIS interchapter: what is the relationship between medicalization/increased screening and diagnosis?

Perhaps not surprisingly, given the title of this chapter and the central argument of this book, I believe that one important avenue for exploring this question is to examine the ways in which it has been defamiliarized and/or extrapolated in science fiction. Science fiction narratives about android or AI testing provide us with a history of interactions between medical and computer science discourses, discourses that, as I argue in the interchapter, are becoming increasingly intertwined. The diagnostic gaze in these narratives is invested in establishing the discursive spaces "between" human and non-human (machine), revealing a preoccupation with technology as a state of alterity that can be subjugated and controlled.

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[142] Susan Sontag, *Illness as Metaphor; and Aids and Its Metaphors*, (New York: Doubleday, 1990), 58.

[143] Janelle Monáe. *Dirty Computer [Emotion Picture]*, YouTube, April 27, 2018, Video, 48:34, https://www.youtube.com/watch?v=jdH2Sy-BlNE.

The dehumanization—or androidization—of certain diagnoses stems from discourses concerning increased medicalization in the US, none more so than the well-documented and well-publicized public health discourses concerning the rise in numbers of autism diagnoses over the past thirty years. Increases in testing and subsequent diagnoses have led to the appearance of the so-called "epidemic" of autism.[144] As has been well-documented by neurodiversity scholars over the past two decades, the language of epidemiology has become metaphorically linked with autism by politicians and corporations alike. The metaphor of an autism epidemic evokes potent images of "plagues that can sweep through the streets, something contagious in the air you breathe or in the food you eat, threatening the ones you love."[145][146] Yergeau, building on Kafer's argument about the public imagination of the future with no disability, argues that for many people, a future with autism is catastrophic in nature: "Autism might be better termed an autpocalypse."[147] This anxiety about the increased medicalization of autism has directly contributed to the emergence of the anti-vaccine movement and the appearance of nonprofits and charities such as Autism Speaks that fund research for public awareness and curative or corrective treatment for autistic individuals.[148]

This metaphorization of autism as an epidemic has led to a usage of autism as a metaphor for the danger of antisocial behavior.[149] Although not directly addressing autism—which is not a

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[144] The autism as epidemic metaphor has been widely debated since the early 2000's; Hannah Ebben, in her wonderful article "The Desire to Recognize the Undesirable: De/Constructing the Autism Epidemic Metaphor and Contagion in Autism as a Discourse," (2018) does an excellent job examining that history.

[145] Roy Richard Grinker, *Unstrange Minds: Remapping the World of Autism* (New York: Basic Books, 2008), 5, http://ebookcentral.proquest.com/lib/uark-ebooks/detail.action?docID=688769.

[146] It will be interesting to see how this metaphor evolves over the next several years in the wake of the COVID-19 pandemic.

[147] Yergeau, *Authoring Autism: On Rhetoric and Neurological Queerness*, 19.

[148] Despite overwhelming contempt and denouncement of these charities, non-profits, and treatments by numerous neurodiversity advocates.

[149] Broderick and Ne'eman examine how organizations like Autism Speaks have discursively linked autism to disease in order to further the epidemic metaphor and to solicit more funding for research. Alicia A. Broderick and

disease but a lifelong neurological condition—Sontag's argument about disease-as-metaphor–cited at the beginning of the chapter–provides an excellent framework for how societal fears become attached to certain diagnoses. If we apply Sontag's logic to autism as portrayed by medical and public health discourses, the diagnosis (or even the symptoms) becomes a metaphor for isolation, for resistance, and for non-awareness.[150] The appeal of autism as a metaphor comes from its "murky" origins: there are no biological tests for autism because researchers are still uncertain of the interaction of biological, cognitive, or developmental factors of autism.[151] It seems that the resistance of autism—as a condition—to empirical biological definition has seized the popular imagination in ways once occupied by schizophrenia and madness.[152] Autism's indefinable status in popular discourse, then, makes it the perfect stand-in for any kind of human difference, quirkiness, or oddity: "At the most extreme level of its representation then, autism enables, because of what is seen to be its inherently unknown and ambiguous nature, the discussion of any number of issues that circulate in the popular understanding of the human condition."[153] The metaphorization of autism as a nebulous condition that can be used to describe or explore human difference furthers the discursive space between the "normal" (allistic[154]) and the "abnormal" (autistic) already created by the diagnostic gaze itself.

It is easy to see how this metaphorization of autism in popular culture, spurred by the increased medicalization of developmental difference, has spawned popular culture discourses

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Ari Ne'eman, "Autism as metaphor: narrative and counter-narrative," *International Journal of Inclusive Education* 12, no. 5-6 (2008): 469, doi: 10.1080/13603110802377490.

[150] Broderick and Ne'eman track several of the major metaphors used to describe autism in popular culture in their 2008 article. Broderick and Ne'eman, "Autism as metaphor: narrative and counter-narrative," 459-476.

[151] Sam Goldstein, "Historical Perspective and Overview," in *Assessment of Autism Spectrum Disorders*, ed. Sam Goldstein and Sally Ozonoff (New York: The Guilford Press, 2018), 2.

[152] Stuart Murray, *Representing Autism: Culture, Narrative, Fascination* (Liverpool: Liverpool University Press, 2008), 207-208, http://www.jstor.org/stable/j.ctt5vjmwc.

[153] Stuart Murray, "Autism and the Contemporary Sentimental: Fiction and the Narrative Fascination of the Present," *Literature and medicine* 25, no. 1 (2006): 25, doi: 10.1353/lm.2006.0025.

[154] Allistic is commonly defined as someone who is not autistic.

that metaphorically link autism to science fiction narratives about aliens and androids.[155] In these narratives, “what the reader is invited to accept is an explicit binary—human/AI—that establishes further implicit binaries—emotional/unemotional, normal/abnormal—aligning normative emotional affect with humanity. Neurotypical/neurodivergent. Human/inhuman.”[156] I would add to Morrison’s argument here that not only do science fiction writers and filmmakers like Philip K. Dick, Ridley Scott, and Denis Veneneuve ask the reader to accept these binaries, they ask readers and film watchers to diagnose characters along these lines. They have established and participated in a long tradition of exploring and complicating diagnosis through narratives about android testing, especially as technological and medical discourses have become increasingly intertwined. It is in these narratives that we can examine the implications of the questions asked at the end of the DIAGNOSIS interchapter through the lens of crip futurity and debility. In this chapter, I will be examining the relationships between science fiction narratives about android testing, autism metaphors, and diagnosis.

The Sally-Anne Test

There are two kinds of tests applied to people who may be neuroatypical. The first kind of test is diagnostic. Due to the inability to perform biological or laboratory testing to obtain a diagnosis for autism specifically, diagnosticians rely on observation of the patient and the taking of patient history through questionnaires, typically taken from a parent or guardian since autism

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[155] Danielle Caruso, “Autism in the US: Social Movement and Legal Change,” *American Journal of Law and Medicine* 36, no. 4 (2010): 484-5, https://link.gale.com/apps/doc/A245660425/LT?u=younglaw&sid=LT&xid=cfbebd35.

[156] Ryan J. Morrison, “Ethical Depictions of Neurodivergence in SF about AI,” *Configurations* 27, no. 3 (2019): 391, doi: 10.1353/con.2019.0021.

diagnostic tests are almost universally performed on young children.[157] Parents are encouraged to monitor their child's developmental progress using developmental milestones—often in the form of checklists or charts—to identify any signs of deviance from the norm. If they suspect deviance, then the child undergoes a developmental screening, usually applied by a pediatrician or a specialist. Many physicians rely on the criteria set forth by the *DSM-V* as a starting point for identifying children who show neuroatypical development, but once autism or another kind of developmental condition is suspected, a specialist will give a test or questionnaire to the parents or to the patient. Here is a short list of assessment tests commonly used in the pediatric field:

- Mullen Scales of Early Learning
- The Peabody Picture Vocabulary Test
- The Autism Diagnostic Intervention Schedule
- The Childhood Autism Rating Scale
- The Wechsler Intelligence Scale for Children
- The Early Screening of Autistic Traits Questionnaire
- The Communication and Symbolic Behavior Scales
- Modified Checklist for Autism in Toddlers, Revised

There are many, many more, but this short list of tests appears over and over again in the literature regarding autism assessment. While the majority of this literature is dedicated to debating and refining the efficacy of individual assessments, there appears to be universal agreement on one point: the only way to effectively diagnose autism is to assess behavior. Testing becomes an integral part of the diagnostic gaze: to recognize and to classify deviance requires increased scrutiny.

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[157] It is extremely difficult to get an autism diagnosis as an adult in the US. Many autistic advocates have discussed the persistence of the autistic person as a child in most diagnostic texts; very little has been written about the diagnostic process for adults. Although, as many autistic scholars and activists have argued, relegating these tests to children often erases the existence of undiagnosed autistic adults, who often have to advocate and pay for their own testing. Goldstein, "Historical Perspective and Overview," 6.

The second kind of test applied to autistic individuals is research oriented: to further ground the discursive space between autistic and allistic[158] within empirical findings. These tests range from genetic and neurological (seeking to find definitive biological markers of autism) to psychological. Because the former has (so far) been unsuccessful,[159] the latter has become the center of focus in explaining the differences between autistic individuals and allistic individuals. This is especially important to maintaining the medicalization of the autism diagnosis: if the strategy of diagnosis relies on transforming human bodies into readable spaces, the resistance of autism to being read in this way threatens the empirical authority of the diagnostic gaze. Theories that provide an empirical explanation for the discursive spaces between autistic and allistic reestablish the objectivity and exteriority of medical discourse.

The most (in)famous and enduring example of this kind of research testing comes from Simon Baron-Cohen, Frith, and Leslie. Baron-Cohen et al are responsible for popularizing the term Theory of Mind (ToM) in relation to autism in a 1985 article entitled “Does the autistic child have a ‘theory of the mind’?” ToM[160] theorizes that neurotypical people can imagine other people’s motives and cognitive function, and this imagination forms the basis of empathy. *Mindblindness*, then, refers to a lack of ToM, a condition which Baron-Cohen et al ascribes specifically to autistic individuals.[161] In order to test their hypothesis, Baron-Cohen, Leslie, and Frith developed the Sally-Anne test. The Sally-Anne test involves showing the subject (usually a child) two dolls: one named Sally and the other Anne. The child is asked to remember the names

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[158] As I write this in a Google Document file on my laptop, it is very telling that the spell check software that Google uses wants to correct the word *neuroatypical* to *neurotypical*.

[159] The only knowledge about the genetic properties of autism that has remained uncontested is that there must be a genetic component because someone with autism is more likely to have autism in their family line. However, what or where exactly this genetic component is remains unclear.

[160] ToM as a term was coined by Premack and Woodruff in their 1978 article entitled “Does the chimpanzee have a theory of mind?” *Behavioral and Brain Sciences* 1, no. 4 (1978): 515–26, doi:10.1017/S0140525X00076512.

[161] Simon Baron-Cohen et al. “Does the autistic child have a ‘theory of mind’?” *Cognition* 21, no. 1 (1985): 38-39.

of the dolls, called the Naming question (the control question). Sally then “hides” a marble in her basket and “leaves” the room. While Sally is gone, Anne takes the marble from Sally’s basket and hides it in her own basket. When Sally returns, the child is asked what the names of the dolls are and where Sally thinks the marble is, the Belief question. This question is designed to test ToM: if the child answers that Sally believes that it is in her basket, then they have demonstrated the ability to imagine Sally’s mind. If they answer that the marble is in Anne’s basket, then they are not able to differentiate between their knowledge and Sally’s knowledge, demonstrating their lack of ToM.[162]

When Baron-Cohen, Leslie and Frith performed their initial Sally-Anne tests, they tested sixty-one children, twenty of whom had already been diagnosed with autism and fourteen with Down’s Syndrome. All of the children answered the Naming question correctly. Twenty-three of the twenty-seven neurotypical children answered the Belief question correctly (Sally thinks that the marble is in her own basket); twelve of the fourteen children with Down’s Syndrome answered the Belief Question correctly; and four of the twenty autistic children answered the Belief question correctly. The researchers concluded that the failure of the sixteen autistic children to correctly answer the Belief question indicates “a specific deficit” of ToM in autistic children.[163]

The legacy of the Sally-Anne test and ToM is enduring: a quick database search reveals dozens of articles in the last five years that posit a deficit of ToM as the major attribute of autism. In fact, ToM research forms the basis of many of the diagnostic tests listed earlier in this section. As one autism researcher put it: “Empathy is essential for the ability to socialize and interact adequately, and several reports have highlighted difficulties in empathy as part of the

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[162] Baron-Cohen et al., 41-42.

[163] Baron-Cohen et al., 42-43.

social-emotional domain in autism."[164] Baron-Cohen has continued his research on the theory as well, putting out test after test designed to demonstrate the lack of ToM in autistic children. Other researchers have replicated the Sally-Anne test and created other variations of the "false belief test," since 1985 to demonstrate the ways in which ToM is an integral part of typical neurological development.[165]

However, among autism researchers and advocates, ToM remains controversial. One such advocate, Ann Memmott tweeted in 2020 about how the Sally-Anne test tests a very narrow definition of ToM: "We've tested verbal ability, we've tested memory retention skills, we've tested visual recognition skills, and we've completely ignored that actually the autistic child might be trying to help Sally find her marble which *is* a proof of theory of mind. What a mess."[166] The Sally-Anne test employs the diagnostic gaze without necessarily interrogating the place where the gaze originates. While many of the autistic participants in the Sally-Anne test and other ToM tests are already diagnosed, the tests themselves are instruments of the diagnostic gaze, a gaze which seeks to quantify the deviance from the norm as a deficit of ToM. ToM itself values only certain signs—pretend play, false belief, etc.—as indicative of empathy. ToM has led to representations of autistic people as self-absorbed burdens at best (see *The Curious Incident of the Dog in the Night-Time*) or evil psychopaths at worst (see *The X-Files* season 1 episode 23 "Roland"[167]). As Yergeau argues, "The ToM discourse that governs empirical study

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[164] Ifat Gamliel Seidman and Nurit Yirmiya, "Assessment of Social Behavior in Autism Spectrum Disorder," in *Assessment of Autism Spectrum Disorders*, ed. Sam Goldstein and Sally Ozonoff (New York: The Guilford Press, 2018), 163.

[165] Katrin Döhnel et al., "An FMRI Study on the Comparison of Different Types of False Belief Reasoning: False Belief-Based Emotion and Behavior Attribution," Social Neuroscience 12, no. 6 (December 2017): 730, doi:10.1080/17470919.2016.1241823.

[166] Ann Memmott (@AnnMemmott), "The Sally-Anne test is responsible for much misunderstanding re autism…," Twitter, February 28, 2020, https://twitter.com/AnnMemmott/status/1233313855213907974.

[167] *The X-Files* does not have a great track record when it comes to representation of autistic individuals. At least once a season, there is an episode involving an autistic character who is usually either threatening or institutionalized or both.

of autism premises itself on cultural panics about what might be termed prosocial behaviors. Autistic bodies, mindblind bodies— these are bodies that not only defy social order but fail to acknowledge social order's very existence."[168] Even among scientific communities, ToM's relationship to autism has become more controversial, but it still provides the framework for many, many research studies and tests[169] and has cemented lack of ToM as a primary symptom of autism in popular culture and, as we will see in the next section, in technological discourses.

But what does this have to do with androids? I argue android testing narratives in science fiction effectively blend these two kinds of tests together: tests that are meant to diagnose androids or other types of AI also rely on and perpetuate discursive spaces between human and not human. This seems like a natural extension of the computer metaphors mentioned in the preceding interchapter: if the brain is a computer, then diagnostic testing for AI and androids directly reflects ideas about diagnostic testing for humans (and vice versa). Science fiction about androids—like medical dramas—often relies on the diagnostic gaze of both the human characters and the audience, each reading bodies for signs of humanity or androidism. Values of empathy, consciousness, and ToM are used to create a hierarchy where humans exist at the top and androids below. These fictional tests mirror the screening tests for developmental disorders by placing emphasis on the diagnostic imperative for distinguishing androids from humans. Diagnostic testing becomes the litmus for human "essence" versus machine materiality, especially in narratives where it is unclear what, if any, physiological differences exist between humans and androids.[170] These two diagnostic testing narratives—science fiction and medical—

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[168] Yergeau, *Authoring Autism: On Rhetoric and Neurological Queerness*, 26-7.

[169] Gene E. Fisch, "Autism and Epistemology IV: Does Autism Need a Theory of Mind?" *American Journal of Medical Genetics* 161A (2013): 2464–2480, doi: 10.1002/ajmg.a.36135.

[170] It is important to note that in no way am I saying that autistic individuals are metaphorically or in actuality androids or machines; to do so would be to objectify and devalue them. As Sontag argues, we ought to resist metaphor when it comes to actually describing disorders or disabilities. I myself am not autistic and thus cannot

actually influence one another. Many ToM type arguments employ technology-based descriptors to other children with developmental disabilities: Baron-Cohen et al. calls ToM “a mechanism,” relying on the body-as-machine metaphorical language discussed in the previous interchapter.[171] While, as we will see in the next section, the roots of diagnostic testing for AI might stem from the computer sciences, the development of AI has drawn on medical research into the “normal” human brain in order to make models for AI learning. To further explore this merging between medical and technological discourses, I will examine one more diagnostic test, this one from the computer sciences, in order to more fully develop my analysis of android diagnostics.

The Turing Test

Imagine you are in a room, sitting at a computer, chatting with two people via instant message. You cannot see the people you are chatting with. Could you identify which was a human being and which was a computer?

This is, at its most basic, the Turing Test. Created by Alan Turing in his seminal 1950 article “Computing Machinery and Intelligence,” the Turing Test has been the subject of debate by computer scientists, philosophers, journalists, science fiction writers, and humanities scholars alike. It is represented in popular culture more than any other test for artificial intelligence: films, books, and even video games have been written with the test as a core plot premise. Turing

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speak from actual lived experience. I am merely exploring the ways in which medical, computing, and science fiction discourses have *employed* similar metaphors for both androids and autistic people via testing narratives. This usage of metaphor is very similar to the “alien” language that neurotypical scholars have deployed against autistic individuals and that many autistic individuals have adopted as a community. However, there are many, many ways in which the actual lived experience of many autistic individuals does not fit into the representations of androids as described here, so it would be simplistic and dehumanizing to equate the two. Rather, by looking at the ways in which medical discourses about testing for neurological disorders such as autism and science fiction discourses about testing for androids have evolved parallel and intersectional to each other, I believe we can better understand these discourses and their limitations.

[171] Baron-Cohen et al., “Does the autistic child have a ‘theory of mind’?,” 38.

himself envisioned the test as a way of exploring the question "Can machines think," although he himself admitted that this requires both a definition of the words *machines* and *think*.[172] If a computer could successfully imitate a human's responses well enough to deceive a human judge, he reasoned, then the lines between machines and humans would be too blurred for the original question—whether machines can think or not—to matter.[173] Perception of intelligence, then, matters more in this test that an actual definition of intelligence, but in creating the criterion for the test, Turing either unwittingly or not incorporated liberal humanist ideas about consciousness and intelligence into the very foundations of computer and AI discourses and within speculative fiction texts that seek to represent those discourses.

What I find most interesting about the Turing Test is its reliance on a machine successfully mimicking a human being in order to pass the test. Turing himself also called the test "the imitation game," implying that the imitation of human attributes represents the metric of consciousness in the scenario.[174] Consciousness is measured in the image of the human—or rather, a certain kind of human.[175] Surety of consciousness is the basic building block of Cartesian reasoning: "I think, therefore I am."[176] However, the nature of consciousness, and who has consciousness, has been the subject of debate, especially as we learn about new species and create new technologies. Scientists believe that consciousness is related to some functioning of the human brain, but beyond that, it is difficult to know the biological origins of what we call

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[172] Alan Turing, "Computing Machinery and Intelligence," in *The Essential Turing: The Ideas That Gave Birth to the Computer Age*, ed. Jack Copeland (Oxford: Oxford University Press, 2004), 441.

[173] Turing, 449.

[174] In fact, when Turing first introduces the conceptual framework for the test, he actually proposes a test concerning gender: instead of communicating with a human and a computer, the diagnostician would be communicating with a man and a woman.

[175] Vint argues that "liberal humanism posits a specific sort of embodied existence—which historically has meant male, white, and propertied—as the essence of human identity." Sherryl Vint, *Bodies of Tomorrow: Technology, Subjectivity, Science Fiction* (Toronto: University of Toronto Press, 2007), 10-11.

[176] René Descartes, *Discourse on Method* (New York: Philosophical Library, 2015), 41.

consciousness. While it has become increasingly obvious that the human brain is not exceptional when compared to other animal or technological species in terms of learned behavior and intelligence, many philosophers since Descartes have subscribed to human exceptionalism when it comes to consciousness (in an almost circular fashion: Humans are exceptional because they are conscious; anything that isn't human can't be conscious).

This philosophy of human essentialism—or even exceptionalism—permeates almost all computer sciences, robotics, and AI studies. We can see the “human brain as computer” metaphor in reverse within robotics discourse: various AI models rely on concepts such as “neural networks,” “deep learning,” “memory,” etc. Many AI and robotics scholars have spent their entire careers trying to build AI that demonstrates human traits such as flexibility,[177] prediction of events based on past experience,[178] and awareness of context.[179] These traits are almost universally measured in terms of what humans can do that AI currently cannot. Rodney A. Brooks begins his book on AI technology by asserting that “What separates people from animals is syntax and technology,”[180] implying that only humans have access to these items and that these items are what put humans above the natural world.

This conception of consciousness as something that is uniquely human also depends on the liberal humanist notion that there is a distinction between body and mind. Consciousness as a concept in European and American humanist discourse comes from Descartes who envisioned a

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[177] Michael Wheeler, “Plastic Machines: behavioral diversity and the Turing test,” *Kybernetes* 39, no. 3 (2010): 466, doi: 10.1108/03684921011036187.

[178] F. Cuzzolin et al., “Knowing me, knowing you: theory of mind in AI,” *Psychological Medicine* 50, (2020): 1057, doi: 10.1017/S0033291720000835.

[179] Erik Blasch, et al., "Methods of AI for Multimodal Sensing and Action for Complex Situations," *The AI Magazine* 40, no. 4 (2019): 51. https://search.proquest.com/scholarly-journals/methods-ai-multimodal-sensing-action-complex/docview/2339950855/se-2?accountid=8361

[180] Rodney A. Brooks, *Flesh and Machines: How Robots Will Change Us* (New York: Pantheon Books, 2002), 3.

distinction between the physical body and the non-physical mind or soul.[181] It is worth noting that Descartes would have disagreed with Turing's optimism concerning thinking machines: he himself argued that while it was theoretically possible that machines that could use languages and experience sensations could exist, they would be unable to act through intelligence. Descartes aligns the machine here with what he perceived as the limitations of a physical body—what he calls "organs"—while "reason" is unconstrained by such barriers: "For whereas reason is a universal instrument which can be used in all kinds of situations, these organs need some particular disposition for each particular action; hence it is for all practical purposes impossible for a machine to have enough different organs to make it act in all the contingencies of life in the way in which our reason makes us act."[182] Descartes makes the distinction between a machine's programming and the diversity of human behavior as a distinction based on reason as that component that is only human, that does not exist in other species.[183] However, he is also arguing that this reason only exists in the human mind, not in the body, creating a duality between the physical and non-physical.

Turing relies implicitly on this Cartesian dualism in his test, arguing that it "has the advantage of drawing a fairly sharp line between the physical and the intellectual capacities of a man" because the participants are invisible to one another.[184] Turing envisioned the test as a

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[181] For a more nuanced and extended discussion of how Cartesian humanism has shaped European and American discourses about bodies, individualism, racism, sexism, etc., see the first chapter of Vint's book *Bodies of Tomorrow: Technology, Subjectivity, Science Fiction* (2007) and the first chapter of Elizabeth Grotz's book *Volatile Bodies: Toward a Corporeal Feminism* (1994).

[182] Descartes, *Discourse on Method*, 140.

[183] While outside the scope of this particular project, it would be worth studying why both Descartes and Turing hold up humans as the species that defines intellect and consciousness. Why would machines not imitate other non-human species instead? "Were humanity to create a sapient AI, it is statistically very unlikely that it would think like humans do." Ryan J, Morrison, "Ethical Depictions of Neurodivergence in SF about AI," 392.

[184] Turing, 442. Interestingly enough, Turing also references disability discourse in his essay by calling on the example of Helen Keller as proof that anyone can learn provided that there is some form of communication. The implied equivalence of Helen Keller to Turing's "child machine," I think, might make my argument for me. Turing, 461.

diagnostic process based on language abstracted from the body; however, the end result of the test, the diagnosis, is a categorization of kind: “this one is human and this one is machine.” Thus, the diagnostic gaze in the Turing Test is mediated through a technological interface, much in the same way that the diagnostic gaze is now often mediated through diagnostic technology (scans, lab tests, etc.). This view of human “essence” as consciousness, some ineffable building block of humanity, largely erases the body in favor of what Hayles calls “the formal generation and manipulation of informational patterns.”[185] If machines could imitate these informational patterns, Turing reasoned, then they could think. Hayles claims that renowned robotics and AI philosopher Hans Moravec later extended this line of reasoning to potential cyborg technology: if embodiment is inconsequential to what makes one conscious, then the informational patterns/essence could be downloaded into a machine and thus made immortal or hyper-abled.[186] Bodies or hardware can be replaced, just like broken parts of a machine, while the conscious self remains intact and inviolable.

This definition of human consciousness as informational patterns that can be imitated, abstracted, downloaded bears remarkable similarities to medical discourses about ToM and autism. This emphasis on imitation, of certain human traits as indicative of consciousness, is at the heart of medical discourses concerning autistic individuals. The Sally Anne test, as well as other tests and checklists for ToM, is based on the imitation of neurotypical behavioral traits as the litmus of what is considered allistic. Imitation is even considered an essential part of neurotypical learning: “typically developing infants engage in nonverbal social-communicative behaviors and are able to synchronize or attune their affective and arousal states to those of their

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[185] N. Katherine. Hayles, *How We Became Posthuman* (Chicago: University of Chicago Press, 1999): iii.
[186] Hayles, 1.

partners from a very early period."[187] The theory is that children learn how to be social from their parents or other guardians, and the implication is that autistic children do not imitate as well as their allistic peers. An autistic person's failure to imitate "normal" behaviors results in a diagnosis much in the same way as an AI's failure to imitate a human would result in the interviewer successfully identifying it as an AI.

In fact, ToM has entered robotics discourse about developing AI over the past twenty years, even as the theory has increasingly been challenged in psychiatric discourses, furthering the merging of medical and technological discourses. Several scholars have worked to develop a "machine Theory of the Mind," citing it as a significant theoretical basis for integrating more human traits into AI.[188] One group in 2018 designed an AI specifically designed to emulate a ToM based on the theory: one of the experiments that the AI (known as ToMnet) passed included a variation on the Sally-Anne test.[189] As noted previously, ToM is already associated with the brain-as-machine metaphor within medical discourse as demonstrated by the persistence of the term *modularity* in such research: "Although hotly debated, ToM is often posited as a cognitive module—or even a series of cognitive modules—mechanisms in which brains (dis)engage. The general idea is that there is a mechanism(s) in the human brain that bears responsibility for ToM, and we know this to be true because autistic people seem not to have such a module."[190] The reciprocal metaphor—machine-as-brain—seems to be equally true for

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[187] Seidman and Yirmiya, "Assessment of Social Behavior in Autism Spectrum Disorder," 147.

[188] Scassellati, for example, in arguing for the inclusion of ToM in AI models designed for human interface, uses some variation of the word normal to describe ToM in human development eight times in his article, cementing the value of ToM in the conception of what is human. Tellingly, two of the behaviors that Scassellati insists would need to be taught to an AI with ToM are eye contact and face recognition, behaviors associated with a neurotypical brain. Brian Scassellati, "Theory of Mind for a Humanoid Robot," *Autonomous Robots* 12, no. 1 (2002): 16 and 18-19, doi: 10.1023/A:1013298507114.

[189] Neil C. Rabinowitz et al, "Machine Theory of the Mind," in *Proceedings of the 35th International Conference on Machine Learning,* 80 (2018): 4223, http://proceedings.mlr.press/v80/rabinowitz18a.html.

[190] Yergeau, *Authoring Autism: On Rhetoric and Neurological Queerness*, 19.

ToM in AI discourse. Machines are not conscious because scholars have not figured out how to code or replicate a ToM module.

Despite its monumental impact on computer science and AI studies, the Turing Test is not without its criticisms; in fact, it has been the subject of fierce debate since Turing first published. I will note two critiques most relevant to my argument about android diagnostic science fiction. One major objection comes in the form of Searle's Chinese room thought experiment. Searle posed the Chinese room thought experiment as an alternative example to tests like the Turing Test designed to show computational consciousness. In the Chinese room thought experiment, a human is locked in a room along with a rulebook for how to manipulate Chinese writing (the program). While they are there, they are passed documents with questions written in Chinese through a slot in the wall (input). Eventually, they might be able to write answers to the questions in Chinese (output) after carefully comparing documents. Searle's claim here is that in this scenario, the human in the locked room is part of the computational process, but they do not necessarily speak or understand Chinese.[191] They just know how to manipulate the symbols that they have been given. In this way, Searle sought to prove that a computer could successfully mimic certain aspects of human consciousness without actually being conscious: simulation instead of understanding.[192]

While the Chinese room thought experiment is certainly not the first or last such argument posed against Turing, it does provide us with another parallel to ToM discourse through the idea of "hacking" or "the idea that autistic people who display metaphoric capacities only do so through rote or compensatory strategies. Hacking is, in a word, passing or

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[191] Why Searle chose Chinese (which isn't a singular language) for this thought experiment is a question worth considering.

[192] John Searle, "Minds, brains, and programs," *The Behavioral and Brain Sciences* 3, (1980): 418.

scripting."[193] Hacking then further blurs machine and medical discourse: an autistic person must be incapable of ToM thinking—just as an AI is incapable of imitating human consciousness according to Searle. Therefore, any sign of ToM on the part of an autistic person must be learned or deceptive behavior (even though according to most developmental psychologists, ToM *is* learned behavior). Even when the qualifications of imitation are met, the goalposts are moved further away to protect the integrity of the diagnosis.

Another important objection to the Turing test, for the purposes of my analysis, is that the test itself relies on machine deception. If the purpose of the machine is to convince a human judge that it is also human by imitating human attributes and answering questions the way it believes a human would, it has every incentive to lie: deception is thus coded into the qualifications of consciousnesses.[194] As Sarkadi et al. writes, "How could a machine be able to reason successfully about the beliefs of other agents if it does not have some knowledge and understanding of its targets' minds? Deception is, after all, a process of epistemic nature."[195] The result of a machine failing is a failed experiment. If it cannot deceive, then it must not be conscious. The diagnostic gaze is once again aligned with the diagnostician as the searcher for truth versus the AI who attempts to deceive.

ToM discourse also is predicated on understanding deception. In order to pass the Sally-Anne test, one must believe that Anne is lying to Sally about where the marble is. In order to understand that another person has a mind separated from one's own, one learns that they can lie and be lied to. Autistic people are then, according to ToM, bad at deception as they are unable to

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[193] Yergeau, *Authoring Autism: On Rhetoric and Neurological Queerness*, 59.

[194] Balaji Srinivasan and Kushal Shah, "Towards a unified framework for developing ethical and practical Turing tests," *AI and Society* 34, no. 1 (2019): 147, doi: 10.1007/s00146-017-0763-y.

[195] Stefan Sarkadi et al., "Modelling deception using theory of mind in multi-agent systems," *AI Communications* 32, no. 4 (2019): 288, doi: 10.3233/AIC-190615.

participate in symbolic or rhetorical understanding of another mind,[196] unless they are taught to hack or to pass. Sometimes, hacking or passing is a tactic of survival: appearing less autistic or neuroatypical is a way of avoiding violence or institutionalization. It is worth asking of both the Turing Test and ToM what the ethics are of emphasizing deception as an essential building block of consciousness, especially since, as I note in the interchapter, machines are already learning racial and gender bias from their programmers.

The science fiction texts analyzed below extend this idea of testing for consciousness to androids rather than to the type of AI that Turing imagined. While it would be an oversimplification to say that these texts emphasize the materiality of the android more than Turing's original scenario does—after all, even the AI that Turing imagined is housed in physical hardware—these stories intentionally envision androids as physiologically similar to humans, thus entering into a metaphorical construct in which androids can act as stand-ins for alterity. The diagnostic gaze in these narratives cannot tell the difference based on biological or genetic testing and must instead rely on linguistic and minute physiological signs of difference. These narratives offer these tests as methods of control and of debilitation, exploring not only the power imbalance between diagnostician and the diagnosed but also the political and social controls created and sustained by the tests themselves.

The Voigt-Kampff Test: *Do Androids Dream of Electric Sheep?* (1968)

The first sentence of Dick's article "Man, Android, and Machine" (1976) reveals Dick's fear of androids as he envisioned them as a metaphor for alterity: "Within the universe there exist fierce cold things, which I have given the name 'machines' to. Their behavior frightens me,

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[196] Yergeau, *Authoring Autism: On Rhetoric and Neurological Queerness*, 54.

especially when it imitates human behavior so well that I get the uncomfortable sense that these things are trying to pass themselves off as humans but are not."[197] This sense of "being taken in" by the Other is not new in speculative fiction; indeed, it is what fueled the racist nightmares of H.P. Lovecraft and Edgar Allan Poe. It is what drives racist, homophobic, and transphobic hate crimes, and white men chanting in the streets of Charlottesville, NC, "you will not replace us!"[198] While Dick explored his fears within the fictional context of his work, his claims that androids or android-like beings[199] exist and pose a danger to society[200] more fully root his metaphors within medical and technological discourses.

Baron-Cohen et al. had not yet proposed ToM as a psychological theory when Dick was writing about androids, but lack of empathy and inappropriate affect is at the heart of Dick's distinction between human and nonhuman: "they [androids] then fall within that clinical entity 'schizoid,' which means lacking proper feeling."[201] The diagnostic language here cements the android-as-neuroatypical metaphor. Android becomes a medical diagnosis synonymous with "schizoid," something that Dick makes even more clear a few sentences later:

> A human being without the proper empathy or feeling is the same as an android built to lack it, either by design or mistake. We mean, basically, someone who does not care about the fate his fellow living creatures fall victim too; he stands a spectator, acting out his indifference. John Donne's theorem that 'No man is an island,' but giving the theorem a twist: That which is a mental and moral island *is not a man.*[202]

Dick's medicalization of the android metaphor might predate Baron-Cohen and Frith's ToM, but it reflects many of the ideas of Bruno Bettleheim who originated the idea that autistic children

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[197] Philip K. Dick, "Man, Android, and Machine," in *The Shifting Realities of Philip K. Dick: Selected Literary and Philosophical Writings*, ed. Lawrence Sutton (New York: Vintage, 1995), 211.
[198] Hawes Spencer and Sheryl Gay Stolberg, "White Nationalists March on University of Virginia," *The New York Times* (New York City, New York), August 11, 2017, https://www.nytimes.com/2017/08/11/us/white-nationalists-rally-charlottesville-virginia.html.
[199] Whom he conflates with posthumans.
[200] Dick, "Man, Android, and Machine," 211-212.
[201] Dick, "Man, Android, and Machine," 211.
[202] Dick, "Man, Android, and Machine," 211.

were incapable of empathy and compared them to machines.[203] Like many psychologists in the mid-20th century, Bettleheim believed autism to be a childhood subset of schizophrenia, and Dick is clearly borrowing from this medical terminology when he refers to “schizoid” or “schizophrenic” humans as similarly lacking in empathy as the androids in his science fiction. Turing saw machine imitation of human consciousness as a sign of intelligence, but for Dick, this imitation is dangerous. Androids, as a stand-in for the posthuman who is fully integrated with technology,[204] hacking or passing as a real human (one capable of empathy) threatens to erode the integrity of the discursive space between human and machine, neurotypical and neuroatypical.

Dick explores this erosion within his most well-known novel *Do Androids Dream of Electric Sheep?* (1968). Much of the scholarship on the novel has focused on the philosophical and theoretical implications of Dick’s android as an extended metaphor for alterity and alienation,[205] posed in the increasingly posthuman landscape of the novel, but not much has been written about the diagnostic imperative of the Voigt-Kampff test. Diagnosis is key to the policing of the discursive space between human and android in the novel: the test both creates and maintains this space via medicalization. In the universe of the text, the test is vital to diagnosing escaped androids—originally created by the Rosen company as slave labor to assist humans with colonization of other planets—who have returned to Earth and are attempting to pass as human.

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[203] Bettleheim’s seminal work on autism *The Empty Fortress: Infantile Autism and the Birth of the Self* (1967) was published one year prior to Dick’s *Do Androids Dream of Electric Sheep?* (1968). Clay Morton, "Thinking Outside the Empathy Box: The Autism Spectrum in *Do Androids Dream of Electric Sheep?* and *Blade Runner*," *Storytelling* 15 (2015): 30, https://search.proquest.com/scholarly-journals/thinking-outside-empathy-box-autism-spectrum-do/docview/1862153373/se-2?accountid=8361.

[204] Dick, “Man, Android, and Machine,” 211-212.

[205] Morton notes that the novel “can be seen to reflect similar assumptions about human empathy and what it means to lack it.” Thus, androids in Dick’s can be read as stand-ins for the Other, but more specifically, they can be read as stand-ins for neuroatypical people. Morton, "Thinking Outside the Empathy Box: The Autism Spectrum in *Do Androids Dream of Electric Sheep?* and *Blade Runner*," 30.

Because of the danger their lack of empathy poses to normal humans, a special police task force of bounty hunters is created to hunt and kill rogue androids (mimicking a kill or cure approach to neuroatypical disability). Biologically, these androids are almost identical to humans, so the bounty hunters rely on the Voigt-Kampff test to positively identify/diagnose androids as such to avoid accidentally killing a human. The test itself replicates the diagnostic gaze in the novel, both for the bounty hunter, the main POV of the novel Rick Deckard, administering the test and for the reader, and reveals the strategy of the state to continue exploiting androids based on a diagnosis.

It is important to note that in Dick's novel, the reader must rely mainly on "human observations about androids rather than delving into the android mind itself."[206] We are never given the android perspective, but rather, we must rely on human POV characters' observations and explanations of android behavior. But, from a human perspective, androids in *Do Androids Dream of Electric Sheep?* are very similar to the ones Dick describes in "Man, Android, and Machine": "fierce cold" beings that try to pass themselves off as human. The andys, as they are called by humans, are organic machines, with very few physiological differences from humans. In fact, the slight physiological differences seem to be mainly life span—andys only live for about 4-5 years due to scientific limitations and come into being fully adult and work-ready—and a small difference in bone marrow that can only be detected via a spinal tap style test.[207] Otherwise, there are very few physical differences between the two species: Rick describes the

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[206] Morton, 31.

[207] There is one physical test briefly mentioned in the novel: the Boneli Reflex-Arc Test. Deckard mentions it after Rachael tells him that she is there to figure out why the Nexus-6 type androids still fail the Voigt-Kampff test so the Rosen company can make the Nexus-7 types even more identical to humans. Although none of the characters specify what exactly the Boneli Reflex-Arc Test measures, presumably it is the test that Deckard referenced at the beginning when he said that the only biological test that could be performed to diagnose an android was to test extracted spinal fluid but that it is too invasive and expensive to make it practical for diagnosing a suspected android. Rachael later tells Deckard that the Rosen company is working to make that test obsolete too, making androids completely biologically indistinguishable from humans.

new Nexus-6 model (the newest andy model) as extremely intelligent with a neural network with "ten million possible combinations of cerebral activity,"[208] surpassing both older android models and humans alike in their ability to reason and causing the older IQ tests to be ineffective as diagnostic tools. These new andys are intelligent, frightening, cunning, and often vicious: "Evidently the humanoid robot constituted a solitary predator."[209] It is against the law for the andys to exist on Earth: they are the property of either the Rosen corporation, the off-world colonies, or the colonists.[210] The ones that the reader encounters in the novel are deceptive, trying to pass as humans on earth in order to avoid death. Several of them, like Pokolov, Luba Luft, Rachael Rosen, and Garland are depicted as fully integrated into human society, with careers in the arts, advertisement, law enforcement, etc.

The main differentiation between humans and andys lies ability to empathize: humans can empathize and andys cannot. The basis of the human and non-human binary in the novel is reinforced through a global human religion called Mercerism which fetishizes empathy as a uniquely human quality, much in the same way that Cartesian dualism fetishizes consciousness. The two primary practices of Mercerism as explained in the text appear to be 1) a group telepathic ritual accessed through a personal device known as an empathy box and 2) the ownership and care of animals, which are venerated and commodified.[211] Mercerism originated in the novel as a religion designed to prevent humans from fighting more wars like the ones that had devastated the planet and forced many to colonize other planets: if more humans empathize with each other and with the natural world (as symbolized by the animals they care for) then they

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[208] Dick, *Do Androids Dream of Electric Sheep?*, 28.

[209] Dick, 30.

[210] Dick, 16.

[211] Sherryl Vint, "Speciesism and Species Being in *Do Androids Dream of Electric Sheep*?," *Mosaic* 40, no. 1 (2007): 112, https://search.proquest.com/scholarly-journals/speciesism-species-being-do-androids-dream/docview/205371388/se-2?accountid=8361.

would no longer destroy each other or their environment. However, androids cannot participate in Mercerism either via the empathy box or through ownership of animals,[212] creating a distinction between the two species and forming the basis for the Voigt-Kampff test.

Diagnosis, then, takes on a crucial medical, religious, and social role in protecting humans from the andys. Diagnosis also debilitates andys into commodities, excluding them from the imperatives of Mercerism to empathize with all living beings.[213] Without the distinction between humans and andys, the enslavement of the andys as “the mobile donkey engine of the colonization program”[214] would not be possible. Andys in this society serve as the receptacle for all labor deemed too difficult or horrifying for humans. In fact, andys are used as an incentive to encourage colonization.[215] Mercerism serves to uplift humans by debilitating andys: “if humans alone have the power to empathize, then their only emotionally profitable, mutually beneficial relationships occur with each other. The andy's deficiency patently expels it from the collective—-any collective, for that matter, even one of other andys.”[216] By creating this discursive space between humans and andys, the state is able to justify its enslavement and commodification of the andys and prevent humans and andys from organizing any type of meaningful resistance.

While Dicks’ androids as metaphor for alterity is complicated by his insistence that the term android can apply to both organic and synthetic beings alike (the only real difference being

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[212] Rick tells Phil Resch that he has only come across two instances in which andys owned animals and that usually the animal ends up dying because they “require an environment of warmth to flourish.” Dick, *Do Androids Dream of Electric Sheep?*, 121.

[213] One of the central ironies of Mercerism in the novel that many of the human characters fail to grasp is the way in which empathy is defined as the essential human trait and yet “absence of empathy for androids is also defined as human.” Vint, “Speciesism and Species Being in *Do Androids Dream of Electric Sheep*?,” 115.

[214] Dick, *Do Androids Dream of Electric Sheep?*, 16

[215] As an incentive to resettle off Earth into the colonies, each colonist is given an android servant of their choosing. Dick, 16.

[216] Jill Galvan, “Entering the Posthuman Collective in Philip K. Dick's ‘Do Androids Dream of Electric Sheep?’” *Science Fiction Studies* 24, no. 3 (1997): 414, https://www.jstor.org/stable/4240644.

their ability to empathize), his metaphor is most closely linked to the metaphors of autistic isolation and non-empathy. In fact, Dick makes this point clear in his connection between neuroatypical humans and the andys. When Deckard speaks to his Blade Runner supervisor about possible failures of the Voigt-Kampff test—namely if a human was accidentally identified as an andy and killed—Bryant argues that there is a group of humans who would fail the test, schizoids and schizophrenic humans. These humans would not express empathy in the same way that an abled human would due to a "'flattening of affect,'"[217] a symptom classically associated with autism and other neuroatypical disorders. Bryant argues that these would certainly be institutionalized: "They couldn't conceivably function in the outside world; they certainly couldn't go undetected as advanced psychotics..."[218] Many Dick scholars have made the connection between Dick's definition of schizoid and autism as it was conceived in the 1960s,[219] but very few have studied the ways in which this flat affect symptom directly affects the Voigt-Kampff test as a diagnostic tool designed to both identify andys through their lack of empathy and to reify the diagnostic distinction between human and andy.

Even the way that the novel explains the empathy difference between andys and humans is evocative of Bettleheim's "empty fortress" and the much later ToM. Rick theorizes near the beginning of the novel that empathy is an evolutionary herd instinct, that humans alone can feel empathy because it allows them to survive as a species, whereas an andy is created by humans to be solitary and short lived and thus never develops the instinct to care about humans, animals, or even other andys. Here is the marriage of the idea inherent in the Turing Test of an ineffable human consciousness and the Sally-Anne notion of empathy as a neurotypical trait. Empathy,

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[217] Dick, *Do Androids Dream of Electric Sheep?* 36.
[218] Dick, 37.
[219] See Hayles, Morton, and Morrison.

instead of cognition, becomes the defining factor of what is human and what is not. An andy "which possessed no ability to feel empathetic joy for another life form's success or grief at its defeat" must only exist in a state of machine materiality and instincts.[220] Rick views his job as a bounty hunter as essential, because andys metaphorically—like the autism epidemic—represent an anti-social danger to society.[221] Rick actually sees these andys as playing a specific role in Mercerism: "The Killers." In order to protect humanity on earth, the andys hiding among them must be identified and eliminated.

The fear of infiltration of the human populace by andys, echoing Dick's own fears expressed in "Man, Android, and Machine" of being deceived or replaced, provides the need for accurate diagnosis. The Voigt-Kampff test represents a type of police state surveillance, a medical strategy of debilitation and control of both human and andys alike. Theoretically, the test could be given to any person suspected of being an andy at any time; in fact, the novel implies that roadblocks and random checks are a regular occurrence on Earth, increased screening leading to the medicalization of different "types" of humans and andys. The diagnostic gaze enacted through the Voigt-Kampff test transforms human and android bodies into "readable spaces."[222] By "reclaiming the disturbed hierarchy between human and machine," Rick, as Blade Runner, reinforces the "illusion of the liberal-humanist subject," allowing the state to further increase its control of human society.[223] By creating discursive space between the human and the andy, the use of andys as labor is sustained: "A degree of inappropriate affect is also the heritage of the Cartesian cogito: the rise of modern science was made possible by the ability to

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[220] Dick, 29-30.
[221] Dick, 31.
[222] Certeau et al., 5.
[223] Galvan, "Entering the Posthuman Collective in Philip K. Dick's 'Do Androids Dream of Electric Sheep?,'" 419.

ignore the suffering of those upon whom one experimented."[224] By commodifying empathetic sensation and creating a hierarchy in which humans can offload labor onto andys, the state is able to incentivize colonization and control the population. In essence, Mercerism as a strategy of control works so well because it “accommodates into its own structures a safety valve for sedition.”[225] Mercerism becomes a distraction from the ecological nightmare that earth has become as well as impetus for a new social stratification between humans and andys, humans with high IQs and humans with low IQs, and between humans who can afford to show off their empathy by purchasing rare status symbol animals and those that must make do with electric ones.

Great concern is also given to the accuracy of the test: Rick’s supervisor at the beginning of the novel is deeply afraid of two hypothetical failures on the part of the test: that andys will eventually be able to pass the test and thus elude capture and that the test will falsely identify a human as an andy and lead to the execution of a human. Either occurrence would represent a catastrophic failure of the system. A false diagnosis would result in the death of a human (anathema to Mercerism) or in an andy epidemic on Earth. This mirrors the logic of contemporary autism screening campaigns,[226] the need for accurate screening material and the impetus for early intervention.[227] The need for accurate diagnosis, then, as the direct result of the medicalized differences between human and android bodies, becomes paramount to maintaining

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[224] Vint, “Speciesism and Species Being in *Do Androids Dream of Electric Sheep*?,” 115.

[225] Galvan, “Entering the Posthuman Collective in Philip K. Dick's ‘Do Androids Dream of Electric Sheep?,’” 417.

[226] Autism Speaks, one of the most well-known and controversial autism organizations, places special emphasis on “early intervention” and “learning the signs” in order to screen children and teens for autistic behaviors. “What is Autism?” *Autism Speaks*, Last modified 2021, https://www.autismspeaks.org/what-autism and “Learn the Signs of Autism,” *Autism Speaks*, Last modified 2021, https://www.autismspeaks.org/signs-autism.

[227] Yergeau, in evaluating Autism Speaks’ 2006 “Learn the Signs” campaign, argues that such early intervention campaigns often use catastrophe metaphors to emphasize the importance of screening children: “autism prevalence is compared to car crash fatalities, hypothermia, kidnapping, and pediatric cancer.” Yergeau, *Authoring Autism: On Rhetoric and Neurological Queerness*, 7-8.

social order, creating that medical panopticon wherein every citizen is charged with surveillance of every other citizen's displays of empathy. Display too little empathy, you might be an android or a "schizoid."

In the novel, diagnosis primarily takes place via the Voigt-Kampff test, a modified version of a polygraph test, designed to measure empathetic reactions. Rick notes that biologically andys are capable of responses indicative of empathy, but that the questions asked in the test do not provoke those responses in andys like they would in a human.[228] Part of the underlying assumption here is that, as Rick states, these reactions are autonomic for humans but andys can only mimic them. Imitation here, then, is only a simulation, as it is in Searle's Chinese Room thought experiment. Although andys are physically almost indistinguishable from humans, they are missing something, something ineffable that does not allow them to have empathy but is expressed through a physiological lack. The Voigt-Kampff test is designed to diagnose this missing module then, much in the same way that the Sally-Anne test is designed to diagnose a missing ToM module in an autistic person. Being an andy, then, is a medical condition, albeit one that is deliberately manufactured.

The first time Rick gives the test is to Rachael Rosen, an employee of the Rosen company and ostensibly the niece of the head of the company. He is asked to give the test to Rachael as an evaluation of the Voigt-Kampff as an instrument of diagnosis: the only information he and the readers are given is that she might be an andy. As the scene unfolds, the reader, like Rick, must attempt to evaluate the readings and the language that Rachael uses to answer the questions given to determine whether or not she is an andy, to diagnose her.

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[228] Dick, *Do Androids Dream of Electric Sheep?*, 44.

The Voigt-Kampff test itself is quite simple in its application: after attaching the sensors to the subject, in this case Rachael, the tester, Rick, poses social scenarios designed to provoke an empathy response from the subject. Rachael points out during the beginning of the test that what the subject *says* in response to the questions does not matter; it is the physiological responses that are subject to the diagnostic gaze.[229] The questions themselves, as Vint has observed, are scenarios meant to evoke an empathy response by describing dead animals or cruelty to live animals.[230] The questions are prewritten, and Rick reads them in a random order. As he reads, he notes the readings of both Rachael's verbal and the physiological responses, often noting whether what she says matches the emotions she feels as signified by the sensor readings.[231]

This use of cardiovascular measurement as a metric for measuring truth-telling is, of course, not unique to Dick's novel. There is a long history of testing as a mechanism for determining if a person is lying; the first use of instrumentation as a mediating lens to ascertain the truth occurred as early as the 19th century.[232] William Marston and Elizabeth Holloway are often considered the forerunners of what we understand as the polygraph test today, implementing their polygraph as a lie-detector for criminals by the year 1915.[233] Polygraphs

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[229] Dick, 46.

[230] Sherryl Vint, "Speciesism and Species Being in *Do Androids Dream of Electric Sheep*?," 115.

[231] Morton, one of the few scholars who has analyzed the parallels between the novel (and the later film adaptation) and narratives about autism, suggests that the closest medical test parallel to the Voigt-Kampff test is Baron-Cohen and Wheelwright's Empathy Quotient (EQ) questionnaire. Morton notes the similarities in even the wording of the EQ questions to the Voigt-Kampff. Compare Deckard asking Rachael for her response to the idea of bullfighting# to actual questions from the EQ: "'It upsets me to see an animal in pain' and 'When I was a child, I enjoyed cutting up worms to see what would happen.'" Morton, "Thinking Outside the Empathy Box: The Autism Spectrum in *Do Androids Dream of Electric Sheep?* and *Blade Runner*," 28. Questions of the EQ quoted in Morton.

[232] Donald Krapohl and Pamela Shaw, *Fundamentals of Polygraph Practice* (San Diego: Elsevier Science & Technology, 2015): 8, http://ebookcentral.proquest.com/lib/uark-ebooks/detail.action?docID=2093185.

[233] Though Marston is often credited as the sole inventor in many textbooks and articles, Elizabeth Holloway, his wife, was co-researcher on the project, and Olive Richards (who eventually lived with both of them) was their research assistant. One wonders why Marston still receives sole credit from scholars. Krapohl and Shaw, 10.

measure three physiological phenomena: cardiovascular activity, respiratory activity, and electrodermal activity.[234] The application of polygraph tests varies across methodologies and schools of thought, but all applications rely on "one fundamental premise, namely that certain psychological processes result in physiological cues that can be measured and interpreted with the polygraph for the purpose of aiding in the detection of deception." While the reliability of the polygraph as an instrument of measuring deception has been called into question over the past few decades (especially since cardiovascular and respiratory systems are affected by a number of widely varying factors from person to person),[235] it still remains a popular and well-known test, particularly within the fictional contexts of crime genres and science fiction.[236]

The polygraph seeks to measure physiological and autonomic signs of truth, while the goal of the Voigt-Kampff test is to measure physiological and autonomic signs of empathy. In this way, the Voigt-Kampff test mimics the clinical encounter as the diagnostician must learn to recognize in the readouts the signs/symptoms of empathy. These signs mainly involve measuring the capillary response and the eye movements. Rick tells Rachael that while an andy's body might have the capacity to simulate the correct biological signs, their brains simply are not programmed to do so in response to the questions asked by the Voigt-Kampff.[237] Again, this fits into the missing module aspect of the ToM; the inability to correctly demonstrate empathy responses affectively as they are expected by an allistic framework is read as the inability to have

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[234] John Synnott et al., "A review of the polygraph: history, methodology and current status," *Crime Psychology Review* 1, no. 1 (2015): 62, doi: 10.1080/23744006.2015.1060080.

[235] Synnott et al., 62.

[236] The most popular interrogation method amongst law enforcement in the US currently is the Reid technique. Like the polygraph, the Reid technique relies on a "non-verbal channel" or physiological signs that indicate guilt. Some practitioners of the Reid technique also rely on polygraph tests. Nadia Klein, "Forensic Psychology and the Reid Technique of Interrogation: How an Innocent Can Be Psychologically Coerced into Confession," *Criminal Law Quarterly* 63, no. 4 (October 2016): 507-508.

[237] Dick, *Do Androids Dream of Electric Sheep?*, 45.

empathy or ToM at all.[238] The knowledge of allistic signs—or in the case of the novel, *human* signs—allows for the recognition of deviance necessary for the diagnostic gaze to exist.

The purpose of Rachael's particular test is to determine if the Voigt-Kampff is still efficacious in diagnosing Nexus-6 andys and to lay to rest fears about the test accidentally diagnosing a human as an andy. Both Rick and the reader are uncertain at the beginning of the test whether Rachael is an andy or a human, thus the reader is invited to share in Rick's diagnostic gaze as he administers the test:

> Rick, selecting question three, said, "You are given a calf-skin wallet on your birthday." Both gauges immediately registered past the green into the red; the needles swung violently and then subsided.
>
> "I wouldn't accept it," Rachael said. "Also I'd report the person who gave it to me to the police."[239]

For many of the questions, like the one above, the reader is only given the question and a description of the readout of the equipment and no other indication of what the reaction or answer might mean, inviting the reader to draw their own conclusions about what the answer might mean. It is only after Rick's fifth question that the reader is given an indication as to how Rick is reading Rachael's response: "The gauges, however, did not respond. Formally, a correct response. But simulated."[240] The reader's gaze is aligned with Rick's gaze, allowing them to take part in the recognition of the signs of empathy or non-empathy, to help him create the discursive boundaries between the human and android binary. Rachael's gaze, what she sees, is not

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[238] These allistic signs of empathy or social behavior are at the heart of many autism screening tests such as the ones listed in the Sally-Anne section. The Modified Checklist for Autism in Toddlers, Revised (M-CHAT), for example, asks the diagnostician if the patient follows social cues like making eye contact and smiling, playing make-believe, and following hand-motions such as pointing. It also asks if the patient makes "unusual" motions with their hands or body. The M-CHAT is available on the Autism Speaks website as well, asking parents to engage in the diagnostic gaze as a pre-screening before a doctor or a therapist does. "Instructions for Taking and Scoring the M-CHAT-R autism test," *Autism Speaks*, Last modified 2021, https://www.autismspeaks.org/screen-your-child.

[239] Dick, *Do Androids Dream of Electric Sheep?*, 46.

[240] Dick, 47.

important because she is the object of the diagnostic gaze.

Rick, as the primary POV of the novel and the only character shown to give the Voigt-Kampff test in the novel, is the person most closely associated with the diagnostic gaze. Even his name, Deckard, evokes Descartes:[241] he is the representative of the cognito, the mind, in this novel while the andys act as simulacra. His diagnostic gaze is a cyborg gaze because it requires the sensors to read the signs or symptoms of empathy, much like the Turing Test relies on language mediated through a messaging system. Rick is not actually looking at Rachael's body directly. His gaze is directed at the read-out that measures the input from the cardiovascular sensors. As a bounty hunter, he has had special training to read these machine languages, much like a radiologist or a lab technician, and to interpret the signs/symptoms of empathy that are expressed in the body. Ultimately, he must diagnose each test subject as either human or andy, a moment even more emphasized during Rachael's test by the switch from the pronoun *her* to the pronoun *it*. Once again, the diagnostic gaze is tied to detective fiction tropes as Rick is literally a detective, albeit one that primarily focuses on retiring andys, with the San Francisco police department. The "crime" is the existence of andys on Earth, still considered a sacred place for humanity despite its almost obliterated ecosystem. Deckard must read the biological signifiers or symptoms of empathy through the mediation of the sensors in order to correctly diagnose or identify whether or not the person being tested is a criminal or not. The onus of proof is on the person being tested; if they refuse the test, they will be incarcerated or destroyed.

By employing what is essentially a fictionalized and modified polygraph to potential andys—andys who do not want to be caught and killed—the novel is also inextricably

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[241] Lorraine Boissoneault, "Are Blade Runner's Replicants 'Human'? Descartes and Locke Have Some Thoughts," *Smithsonian Magazine*, October 3, 2017, https://www.smithsonianmag.com/arts-culture/are-blade-runners-replicants-human-descartes-and-locke-have-some-thoughts-180965097/.

identifying lack of empathy with deception, much in the same way that the Turing Test identifies human consciousness with deception. Much like the fictitious Dr. House, the very real doctors who take patient histories, or the judge of a Turing Test, the administrator of the Voigt-Kampff test must maintain a skepticism towards the testee/patient. Andys in the novel can imitate, hack, or pass almost any other metric of human consciousness (most of Dick's andys would pass the Turing Test easily): their ability to manipulate language in order to deceive is quite advanced. Linguistic dishonesty here is presented as an andy tactic to resist the overall strategy of the test, creating slippages between signifier and signified. During her test, Rachael uses the language of the test in order to attempt to manipulate Rick. When Rick poses a scenario involving a pornographic image of a nude woman, she tries to obfuscate by redirecting the conversation towards sexuality: "'Is this testing whether I'm an android,' Rachael asked tartly, 'or whether I'm homosexual?'" She is joking, of course, but the joke relies on the premise that homosexuality is a diagnosable condition. It was in 1968: the DSM did not remove homosexuality as a diagnosis of mental illness until 1973.[242] By questioning the diagnostic efficacy of the test, even if just in jest, Rachael attempts to redirect Rick's gaze towards a different anti-social diagnosis, even if her bid is ultimately unsuccessful.[243]

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[242] Jack Drescher, "Out of DSM: Depathologizing Homosexuality," *Behavioral Science (Baseline)* 5, no. 4 (2015): 565-575, doi: 10.3390/bs5040565.

[243] Yergeau argues that rhetorically, autism and queerness have always been linked in medical and popular discourses: "We can locate queerness in nineteenth-century fears about the feeble-minded and sexual deviance; we can locate queerness in the mainstreaming of ABA, which is used to eliminate 'feminine sex-typed behaviors' and 'cross-gender identification' in gender-variant children and to make autistics 'indistinguishable from their peers;' we can locate queerness in theories about ToM, which are premised on the idea that autistics, regardless of gender identity, have an extreme male brain; and we can locate queerness in the self-identifications of autistic people, who, anecdotally, have a far higher preponderance of queer identifications than do non-autistic populations. Often, discourse on the queer takes shape with regard to autistic people's identifications, but it also takes form as a verbing of that which supposedly makes autistic people antisocial and non-rhetorical creatures." Yergeau, *Authoring Autism: On Rhetoric and Neurological Queerness*, 26.

However, it is the next Voigt-Kampff test in the novel that truly foregrounds a method of andy resistance through deception. Rick visits the rehearsal of Mozart's *Magic Flute* opera to test and kill the lead, Luba Luft. Deception is introduced in the quoted lines from the opera:

> Papageno: "My child, what should we now say?"
> Pamina: "The truth. That's what we will say."

Rick notes the irony here of an andy singing Pamina's line here, "an escaped android could hardly tell the truth about itself, anyhow."[244] Implied in Rick's statement is that andys cannot tell the truth because of the danger of retirement, but the statement also implies that andys do not tell the truth about themselves because they are incapable of it. When he visits her dressing room to administer the test, he is already half-convinced that she is an andy, citing her "cold reserve" as a trait common to androids.[245] When he pushes the test on her, she immediately begins to question the need for the test and Rick's ability to administer it. In a surprising turn, Luba offers to give the test to Rick first, stating that since, as a bounty hunter, he does not care about android lives, which must mean that he is an andy himself.[246] Here, Luba is seeking to destabilize Rick's confidence in his humanity, in his ability as a diagnostician to pre-exist discourse, by reminding him that he himself might be subject to the same testing that she is. He might also wake up one day and realize that his memories are false, like Rachael's. She is also drawing his attention to the contradiction between Mercerism and android debilitation.

Although alarmed, Rick brushes this aside and responds that she is too inexperienced to give the test, reinforcing the diagnostician's superior training over a test subject's lived

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[244] Dick, *Do Androids Dream of Electric Sheep?*, 91.
[245] Dick, 93.
[246] Dick, 94.

experience.[247] When the test begins, Luba begins to draw on her alleged background as a German unfamiliar with English to resist the test's diagnostics:

> "What's a wasp?" Luba Luft asked.
>
> "A stinging bug that flies."
>
> "Oh, how strange." Her immense eyes widened with childlike acceptance, as if he had revealed the cardinal mystery of creation. "Do they still exist? I've never seen one."
>
> "They died out because of the dust. Don't you know what a wasp is? You must have been alive when there were wasps; that's only been—"
>
> "Tell me the German word."
>
> He tried to think of the German word for wasp but couldn't. "Your English is perfect," he said angrily.
>
> "My accent," she corrected, "is perfect. It has to be, for roles...But my vocabulary isn't very large." She glanced at him shyly.
>
> "*Wespe*," he said, remembering the German word.
>
> "Ach yes; *eine Wespe*." She laughed. "And what was the question? I forgot already."[248]

This obfuscation continues for several more pages, with Luba confusing the words *verdant*, *Currier*, *Ives*, and *decor* and generally misunderstanding and confusing the questions. The testing sequence ends with Luba pulling a gun on Rick, revealing herself to be an andy, and calling the cops (eventually leading to her retirement).

Luba's insistence on turning the test's protocols back around on Rick represents a tactic designed to destabilize the diagnostic gaze. She attacks the test through language, creating what Rick calls "a semantic fog." She resists the transformation of diagnosis into a readable space by literature becoming unreadable, unknowable. She exploits the temporally and spatially situated nature of Rick's position as a diagnostician by refusing to communicate with him in his own

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[247] Dick, 94.
[248] Dick 95.

language, on his terms. Luba, at least for a moment, "calls attention to the always unstable relationships between signifier and signified, creating static in an otherwise apparently lucid and unproblematic medium." To answer the questions as Rick asks them is to submit the authority of the state strategy of debilitation on its own terms,[249] but to resist participating in the test on its own terms creates slippage between the diagnostician and the diagnosed, refusing the gaze access altogether. In this way, Luba Luft illustrates the limits of the clinical encounter by forcing the diagnostician to contend with the limits of his own gaze.

Rick begins to question the premise of the Voigt-Kampff test around the midpoint of the novel when he meets fellow bounty hunter Phil Resch, a man who is accused of being an andy by an android that Rick retires. Resch has no empathy for andys whatsoever; he seems gleeful when he kills Luba Luft after she gets on his nerves. Rick, aghast at Resch's cruelty, immediately demands that he take the test, believing without a doubt that Resch is an andy. When Resch tests as a human, Rick's entire view of the binary between humans and andys is challenged. He asks Resch to administer the test to him, much as Luba had demanded several pages earlier.[250] While Resch is not able to give him the full test—he has not been trained in it as Rick has—he is able to assist enough for Rick to realize, by turning the diagnostic gaze inward, that he has begun to develop feelings of empathy for androids. While Resch claims that this is temporary and has to do more with Rick's attraction to Luba and Rachael than with true empathy,[251] he argues that empathy for androids is dangerous:

> "You realize," Phil Resch said quietly, "what this would do. If we included androids in our range of empathetic identification, as we do animals."
>
> "We couldn't protect ourselves."

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[249] Galvan, 421.

[250] Dick, *Do Androids Dream of Electric Sheep?*, 130-131.

[251] Which may say more about Resch's misogyny than Deckard's sexuality.

> "Absolutely. These Nexus-6 types...they'd roll all over us and mash us flat. You and I, all the bounty hunters—we stand between the Nexus-6 and mankind, a barrier which keeps the two distinct."[252]

Notice the framing of the bounty hunters as a "barrier" between humans and androids, a framing that nowadays seems like a predecessor of the "thin blue line" discourse that posits the US police force as the caretakers of the boundary between social order and chaos in order to justify the punishing violence that police often enact.[253][254] For Resch, the ability to police the boundaries between the two populations through lethal force requires a level of non-attachment and even cruelty. If the diagnostic gaze, as exemplified by the bounty hunter, loses its objectivity, if it begins to see androids as a part of society instead of as a threat to society, it loses its strategic authority, destabilizing the discursive spaces that allow debilitation to occur.

However, even though the novel questions this policing–asking if the near constant presence of technology in our lives has made us more human or less human–it still relies on the discursive spaces between the diagnostic categories to establish the metaphor between the empathy that belongs to humanity and the alienation that belongs to the andys. Rick can, in the end, recognize that andys "have their lives, too," but he sees those lives as inferior, "paltry."[255] In

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[252] Dick, 131.

[253] An often-overlooked aspect of police violence against Black people is the prevalence of disability among the victims: it has been estimated that a third to half of all people killed by the police in the US were disabled. This does not even take into account the number of people who have been disabled by police violence. David M. Perry and Lawrence Carter-Long, "The Ruderman White Paper on Media Coverage of Law Enforcement Use of Force and Disability," The Ruderman Family Foundation, March 2016. https://rudermanfoundation.org/wp-content/uploads/2017/08/MediaStudy-PoliceDisability_final-final.pdf.

[254] Numerous examples of police violence against autistic people are also available, including the recent and prominent murder of Elijah McClain by the police in 2019 in Aurora, Colorado. After detaining him during a walk home due to an emergency call reporting "a suspicious person," the police placed him in a chokehold and directed a fire medic to inject him with a lethal dose of ketamine. This treatment consistent with the debunked diagnosis of "excited delirium" which I argued in the DIAGNOSIS interchapter is often applied to Black disabled individuals by the police. Reports surrounding McClain's death also emphasize his autism in relation to both the police suspicion of him (he was wearing an open-faced ski mask to protect from one of his conditions) and in his reaction to being detained ("I'm an introvert, please respect my boundaries that I am speaking"). "Elijah McClain: 'No legal basis' for detention that led to death," February 22, 2021, https://www.bbc.com/news/world-us-canada-56134565.

[255] Dick, *Do Androids Dream of Electric Sheep?*, 222.

fact, the ending, in which Rick discovers that realizing that empathizing with andys makes him more human, is dangerously close to the idea that looking at images of disabled people living their lives should make abled people more grateful for their nondisabled status.[256] Rachael, the andy who the reader spends the most time with, still throws Rick's live goat off his building's roof as revenge for him killing her friends. Although horrified, Deckard tries to empathize with her by recognizing that she has internal motivations for what she does, but he cannot access or comprehend what they might be, concluding that it must have been "an android reason."[257] It is with another human, his wife Iran, that he can share this newly found empathy and humanity, not with the cold dark-haired girl that he slept with in an obsession with android sexuality. In this way, humans are still preferred to androids, but only if they act like humans (i.e., with empathy) instead of androids. Androids are valued only if they act like humans, not when they act like androids. The philosophical underpinnings of the Voigt-Kampff test still stand.

Even though the novel attempts to blur the lines between android and human in order to interrogate the posthuman, it still employs the metaphor of the android as the antisocial, disabled, and neurodivergent antithesis to those qualities that are essentially human. Deckard's empathetic awakening might help him to be a better human, but it does not essentially change the material conditions in which the androids live. Like the child in the basement of Omelas, the androids are still trapped in the cycle of debilitation in which they cannot escape.

The Voight-Kampff Test: *Blade Runner* (1982)

While the novel *Do Androids Dream of Electric Sheep?* introduces the idea of the diagnostic gaze as tied to policing, the 1982 film adaptation of Dick's novel *Blade Runner* folds

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[256] In many disabled communities, this practice is often colloquially referred to as "inspiration porn."
[257] Dick, 209.

the diagnostic gaze of the Voight-Kampff test (adding an *h*) into the cinematic gaze, prompting the second question I asked at the end of the DIAGNOSIS interchapter: how does the melding of the cinematic and diagnostic gaze represent forms of disciplinary power?

Considered one of the first pieces of the cyberpunk genre that emerged in the 1980s, the film replaces the Mercerism of the novel with a much darker, more overtly dystopian, landscape of San Francisco. The oppressive and near constant commercialization of public life through neon signs and advertisement zeppelins and spinners in the polluted and dingy skyline emphasizes that humans and androids alike have been commodified. Because *Blade Runne*r as a piece of cinema invokes and mimics the gaze, further strengthening the visual component of the subject-object relationship between the diagnostician and the patient.[258]

There are a few other changes beyond the addition of a letter to the Voight-Kampff test to note in the adaptation: the androids of the film are called *replicants*, a word that emphasizes the ways in which they simulate human behavior but cannot be human. The replicants of *Blade Runner* are much more sympathetic than the androids of Dick's novel. While they can still act in violent ways, more emphasis is placed on their origin as a debilitated labor force. There are five replicants depicted in the film, four of which are the replicants that Deckard is assigned to retire: Leon (Brion James), Pris (Daryl Hannah), Roy Batty (Rutger Hauer), and Zhora Salome (Joanna Cassidy). Each was created for a different purpose and have different personalities and skills, emphasizing their purpose as biocapital for the Tyrell Corporation and their individual owners. When Deckard is given the bounties by his former supervisor Bryant, Bryant gives him a rundown on each replicant, emphasizing their abilities and limitations as the new Nexus-6

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[258] I also should note that Blade Runner exists as a sort of cyborg text itself in that there are several different cuts of the film, most notably the original theatrical cut and the final cut that Scott released in 2007. There are a couple of differences between the Voight-Kampff representations in both, so I will note which cut I am referring to when describing those differences.

models. However, he also identifies them by their model–a description of what labor they were designed to do. Leon, for example, served as a “400lb (181kg) nuclear-head loader in the outer space colonies.” Batty is “a combat model” and Pris “a basic pleasure model.” Their models have specific letter grades for physical and mental capacities that correspond to the type of labor they were designed to perform. Their models and labor are also gendered, with Pris being intimately tied with sex work while Leon and Batty are military models.

However, the viewer gets little glimpses in this film into the private lives and ways in which these particular replicants have begun to resist their model designations. Leon, for example, is a photographer and values the photographs he has taken of himself and his friends. Although Pris is clearly designed to provide sexual labor for humans, she and Batty have formed a deep romantic attachment, and she takes obvious pleasure in the movements of her own body through gymnastics. Conversely, Zhora becomes a sex worker by gaining employment as an exotic dancer at Taffey’s Bar, taking control of the kind of physical labor she performs. Batty uses his genius level intellect–designed for military strategy–and his incredible physical prowess to defend his friends and to advance his own ends, against the wishes and interests of the Tyrell Corporation.

While the discursive space between humans and replicants is still predicated on the idea that humans can feel empathy and replicants cannot, the film explores the emotions of the replicants in much more detail, allowing the viewer to not only see the observations of the humans but of the replicants as well. We can see this through the Voight-Kampff test represented in the initial scene of the film. Just as in Dick’s novel, there are two representations of the Voight-Kampff test in the film, although the first one is completely unique to the film. It occurs at the very beginning in what appears to be an office building between a Blade Runner named

Holden (Morgan Paull) and Leon (his replicant identity is not immediately made clear to the viewer). Leon appears nervous at the beginning of the test and informs Holden that he has "already had an IQ test that year," implying that diagnostic testing is actually a quite common occurrence just as it is in the novel. Holden tells Leon to answer the questions as quickly as possible, that reaction time is a factor, and that "the test is designed to provoke an emotional response."[259] Leon resists the questions via rhetorical obfuscation, much like Luba does in the novel. When Holden asks him about assisting a tortoise that has flipped over in the desert, Leon interrupts the question to ask, "What desert?" and "What am I doing there?" He also asks if Holden writes the questions himself or if they are prewritten.[260] The test ends after Holden asks Leon to "describe only the good things that come into your mind about your mother," resulting in Leon shooting Holden and revealing that he is a replicant. In the *Final Cut* of the film, the viewer is invited to share in Leon's anxiety during the test as Holden's voice asking the questions fades into the background and Leon's breathing and heartbeat become the central sounds of the scene.[261] While the implications are unvoiced in this scene, Leon later takes his anxiety out on Deckard, attacking him in retaliation for killing Zhora. He tells Deckard (Harrison Ford), "it is painful to live in fear and nothing is worse than to have an itch you can never scratch."[262] Leon's fear is associated with the test and the consequences of being diagnosed as a replicant, but more importantly, the viewer is allowed into his fear, to experience his emotion as he is being diagnosed, aligning the viewer more with the patient rather than with the diagnostician.

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[259] "Leon takes the Voight-Kampff test," *Blade Runner*, directed by Ridley Scott (Final Cut; Burbank, CA; Warner Home Video, 2007), Blu-ray.

[260] "Leon takes the Voight-Kampff test," *Blade Runner*.

[261] "Leon takes the Voight-Kampff test," *Blade Runner*.

[262] "Leon attacks Deckard," *Blade Runner*.

While Leon is primarily identified with fear in the film, other replicants express varying levels of emotion and even perhaps show signs of empathy in the film. Batty, for example, although violent, expresses genuine affection for Pris and grieves when she dies. Rachael has an existential crisis when she realizes that she is an android but is able to find meaning in her relationship with Deckard and in her memories, even though they are false. Morton draws the connection between changing medical views on autism and the shift in the depiction of replicants from novel to film, noting that the film was released during the emergence of the "cognitive paradigm" and the theory of autism as a spectrum as opposed to an abnormal state.[263]

Whereas the viewer is invited to identify with Leon in the first representation of the Voight-Kampff test, the second representation of the test, the test Deckard gives to Rachael (Sean Young), is much more closely aligned with Deckard's diagnostic gaze as in the original novel. Again, Rachael is presented to Deckard as a representative from the Tyrell Corporation who may or may not be a Nexus Type-6 replicant, "more human than human". The test is represented almost identically to the test given in the novel: a sensor is attached to Rachael's face and a light beam shines in her eye. Deckard asks almost the exact same questions representing scenarios of animal cruelty, and her answers are almost the same as the novel. The two most notable differences are that Rachael's Voight-Kampff test is recorded (allowing Deckard to view footage of the test repeatedly) and that she, unlike the Rachael of the novel, was truly unaware that she is a replicant.[264] She only discovers this after Tyrell confirms Deckard's diagnosis after the completion of the test, causing her to have a complete existential crisis.

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[263] Morton, "Thinking Outside the Empathy Box: The Autism Spectrum in *Do Androids Dream of Electric Sheep?* and *Blade Runner*," 34.

[264] Although the Rachael of the novel says after the test that she did not know she was a replicant (and is reassured by Rosen), her conversation with Deckard later in the novel about how many bounty hunters she has slept with reveals that she has perhaps known longer.

Divorced from the context of Mercerism, the questions Deckard asks Rachael might seem odd. After all, without the emphasis on empathy towards animals, a contemporary viewer of the film might not find anything wrong with being given a calfskin wallet.[265] However, the focus of the scene is on Rachael's reactions as viewed through Deckard's gaze and the framing of the recording on the monitor. Deckard looks from Rachael's face to the instrument readouts, and the viewer is invited to do the same. Once the test is complete, Tyrell dismisses Rachael from the room and tells Deckard that he is "impressed" by Deckard's skill as a diagnostician. Tyrell observes that it usually takes Deckard only 20 to 30 questions of the test to make an accurate diagnosis: with Rachael, it took over 100. Deckard is impressed by Rachael's imitation, asking Tyrell if she knows that she is a replicant. Tyrell notes that since replicants experience emotions in a short time period, they develop "strange obsessions," a line which evokes what many autistic advocates refer to as "fixations," a symptom of autism. By giving them false memories that convince them of their humanity, the Tyrell corporation is "able to control them better."[266] The emphasis on debilitation here, the expectation that the replicants can and should be controlled through biological and psychological processes through medical advancement, is much less subtle in the film than it is in the novel.

Scott also emphasizes Deckard's role as researcher/detective as well as diagnostician much more than the original novel, mainly through the use of noir imagery and motifs.[267] The constant darkness of the oppressive cityscapes, the play of light and shadows, and the grim pessimism of Deckard's hard drinking and solo lifestyle[268] all riff on the classic noir style of detective films from the 1940s and 1950s. In the theatrical cut of the film, Deckard even does a

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[265] As Vint notes, many readers of Dick's work would actually fail the Voigt-Kampff test.
[266] "Rachael's Voight-Kampff Test," *Blade Runner*.
[267] Noir is commonly considered the progenitor of cyberpunk as a genre.
[268] He is single in the film as opposed to married in the novel.

voiceover, an homage to films like *Sunset Boulevard* and *Double Indemnity*.[269] Scott has compared the character of Deckard to Philip Marlowe, a hardboiled detective character from Raymond Chandler's crime fiction series, and a "dark Bogart character" in reference to Bogart's work playing noir detectives (including a run as Philip Marlowe). Deckard as a detective relies on the Voight-Kampff test as a way of immersing himself into the mindset of his quarry. He obsessively watches and re-watches the recordings of Leon's test and Rachael's test. He pauses, rewinds, and notes every detail of Leon or Rachael's reactions, especially those of Rachael.

Deckard's obsession with Rachael's test recording stems from his feelings for her, placing her firmly in the femme fatale role of neo-noir. He appears to be trying to determine whether she has empathy or not in order to know if he can be in a relationship with her. While she does appear to have a sort of empathy, in a marked departure from the original novel, her empathy is qualified in the film through her feelings for Deckard. It is he who tells her how she should feel, including through a violent sexual assault (played in the film as a passionate encounter despite Rachael's protests and her visible intimidation by Deckard).[270] If Deckard cares for her, and can make her appear to care for him, then she must be capable of some empathy. This seems like a marked shift away from the vindictive and cold Rachael of the novel: imitation seems to be given more value in this representation than in Dick's paradigm.

The cinematic gaze, coupled with the diagnostic gaze, allows the film to implicate the audience in the identification/diagnosis of the replicants. The film is invested in the optical symbolism: the first sequence of images of the film is two close-up shots of a blue eye reflecting

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[269] This voiceover was controversial, as it was disliked by both Scott and Ford. It was removed from the *Final Cut*.

[270] Sean Young has accused Ridley Scott of making the sex scene in Blade Runner "incredibly aggressive and uncomfortable" for her in retaliation for her refusing to date him. Antonio Ferme, "Sean Young Says Her Career Was Derailed by Ridley Scott, Oliver Stone, Warren Beatty and Others," *Variety*, March 22, 2021, https://variety.com/2021/film/news/sean-young-ridley-scott-oliver-stone-warren-beatty-1234935883/.

the lights and fires of the city intercut with overhead shots of the city, emphasizing the near total surveillance of the city by the state/Tyrell corporation. This first shot centralizes the gaze, both of the characters themselves and of the viewer, as a mechanism of disciplinary power.

The character Batty especially recognizes this. He is obsessed with eyes and the power they symbolize, both strategic and tactical power. In the scene where he is introduced, he interrogates Chew, the designer of the Nexus 6 eyes, and tells him, "Chew, if only you could see what I've seen with your eyes," while Leon places disembodied replicant eyes on Chew.[271] He echoes this later in the film when he tells Deckard, "I've seen things you people wouldn't believe…."[272] Later, Batty removes Eldon Tyrell's glasses and then gouges out his eyes, killing him and symbolically removing his power. Batty understands the gaze as a mechanism of the totality of the Tyrell corporation's strategy of debilitation of replicants. He also understands the power of his own gaze as representative of his experiences, his own personal resistance to such strategic narratives.

The eye imagery is important to the medical panopticon created by the film for the viewer as much as it is to the characters in the film. Every single replicant in the film, including the owl in the Tyrell headquarters, is marked as a replicant by a moment or two where a light reflects in their eyes. In an interview breaking down the filming techniques of the Voight-Kampff scene, Scott attributes his use of the light in the eyes–accomplished by a half mirror mounted in front of the lens of the camera–as a way to give the audience a way to differentiate between replicant and human.[273] The light-reflection then becomes a sign or a symptom of androidism visualized by the cinematic gaze. In this way, the film continues to intertwine the

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[271] "Batty interrogates Chew," *Blade Runner*.

[272] "Batty's death monologue," *Blade Runner*.

[273] Ridley Scott, "Ridley Scott Breaks Down His Favorite Scene from Blade Runner," *WIRED*, September 19, 2017, https://www.youtube.com/watch?v=IpzFOHEO8Sc.

cinematic gaze with the diagnostic one, training the audience to carefully search for these signs in order to identify or diagnose androids.

Furthermore, Scott also designed the light-reflection in the replicant eyes as a reference to the first scene in Stanley Kubrick's film *2001: A Space Odyssey* (1968) which contrasts the emergence of a cognitive ape learning how to use tools/technology and the predatory danger of the natural world through the image of a leopard lying next to its dead prey, light glinting for one moment in its eyes.[274] This aligns the replicants more with the animals and less with humans.

However, while Scott sees this as a reference to *2001: A Space Odyssey*, the light reflection also symbolically represents the light of the Voight-Kampff test. By having the light present throughout the narrative, even outside of the testing scenario, the film emphasizes the strategic power that the Voight-Kampff gives to the Tyrell corporate-state. The film also emphasizes the use of the Voight-Kampff as a state strategy to debilitate through fear. While this is perhaps most obvious in the initial scene when Leon takes the Voight-Kampff test, Batty makes the connection clear in his exchange with Deckard: "Quite an experience to live in fear, isn't it? That's what it is to be a slave."[275] While Morton notes that this line indicates that Batty does in fact have some empathy for Deckard in the moment as he watches him dangle off a roof (and ultimately saves his life),[276] Batty is also highlighting the control that the Voight-Kampff allows the state.

The film's version of Rachael also challenges Deckard's perceptions of the differences between them just as the novel's Rachael does, albeit less confrontationally and more sympathetically. She asks him if he has ever taken the Voight-Kampff test, "demonstrating that

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[274] Ridley Scott, "Ridley Scott Breaks Down His Favorite Scene from Blade Runner."
[275] "Deckard confronts Batty," *Blade Runner*.
[276] "Deckard confronts Batty," *Blade Runner*.

he, the ultimate enforcer of standards of human normalcy, is not particularly troubled by the subjectivity and ethical ambiguity of those standards."[277] Ultimately, the film is much more ambiguous in its blurring of the lines between human and machine than the novel because Deckard's own humanity is in question.

The film's ambiguity on whether Deckard is in fact a replicant or a human is much more pronounced than in the novel partially because Scott and Ford (who plays Deckard) disagreed on the topic during production and for many years following the film's release. Scott was fascinated with the idea that Deckard was a replicant because of Rachael's comment, the paranoia of realizing that anyone could have "looked at his files" just as he has looked at Rachael's and Batty's. However, Ford believed that it was important for Deckard to be human because he believed that the audience needed someone to identify with, that a replicant main character's motivations would be inaccessible to the audience. This ambiguity between interpretations of the main character by the director and lead actor–and the many years of public disagreement in press releases, commentaries, and interviews by both–actually encourages the viewer to redouble their observation on Deckard for any visual signs of androidism, employing the cinematic gaze as a diagnostic one**.**

One scene is especially touted by viewers who believe Deckard to be a replicant as proof. In the film, Rachael visits Deckard's apartment to insist that he must have made a mistake and tries to prove her humanity by showing him a family photo. He reveals that he has read her file and give a few examples of her implanted memories, proving that she is a replicant. As she processes this information, she stands in front of a window looking out, with Deckard standing behind her, a little to her left. As Deckard turns to move away from her, there is a brief shot

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[277] Morton, "Thinking Outside the Empathy Box: The Autism Spectrum in *Do Androids Dream of Electric Sheep?* and *Blade Runner*," 34.

where light is shining in his eyes, causing them to glow in a similar way to the other replicants in the film.[278] It is a very brief moment and very easy to miss–in fact, Ford claims that it was a mistake and that he had accidentally moved into Sean Young's light–but viewers of the film have interpreted this visual sign into evidence of the character's status as a replicant, thereby diagnosing him.

This shift towards ambiguity from novel to film reflects changing attitudes towards the metaphor of the android in the late 20th century. Whereas the android had firmly represented dangerous alterity previously, by the '80s there was a shift towards exploring the nuances of that alterity.[279] You too might be a replicant, the film seems to say, thereby bringing the light of the Voight-Kampff out of the screen into the world.

The Baseline Test: *Blade Runner 2049* (2017)

The 2017 sequel *Blade Runner 2049* is worth a very brief examination precisely because it disregards the Voight-Kampff test altogether in favor of The Baseline Test. Thirty years after the events of the first film, the Blade Runners and police have simplified the biological test for androids, making the Voight-Kampff obsolete. However, the employers/owners of replicants test them regularly with the Baseline Test, in which the emotional levels of a replicant are measured against a baseline reading.

Unlike the Voight-Kampff test, replicants are now assumed to have the capacity for empathy and emotional responses. However, their value as biocapital remains in their ability to do work that humans cannot or will not do, so these emotions are deemed to be dangerous,

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[278] "Rachael confronts Deckard in his apartment," *Blade Runner*.

[279] Morton, "Thinking Outside the Empathy Box: The Autism Spectrum in *Do Androids Dream of Electric Sheep?* and *Blade Runner*," 34.

defects in an otherwise perfect machine. Agent K (Ryan Gosling) is a replicant who has been designed to hunt down and retire other escaped replicants. He could not possibly do this if he developed empathy for his prey, so he is given the Baseline Test after every mission to confirm that he remains replicant enough to continue his work. He must sit in a white room and recite and repeat a series of rote poetic lines. His autonomic responses are measured for any sign of emotion or distress–much like the original Voigt-Kampff test. The test is shown twice in the film. The first time, right after he retires a replicant at the beginning of the film, he passes quickly and collects his pay. The second time, he fails, showing obvious emotion despite repeating the same words.[280]

This film, more than the first two, emphasizes the debilitation of androids through optimization and efficacy. Replicants passing as humans have become a thing of the past due to the streamlining and ease of physical testing. Instead, the emphasis becomes on optimizing the replicant as biocapital and extracting the most from each android. In order to complete their intended function as a labor force engaged in dangerous work environments, replicants must never be allowed to develop empathy or emotional irregularities. If they did so, they would develop needs that are only allowed to humans in the film. Thus, the Baseline Test looks for any deviation in a replicant’s programming in order to ensure that they are operating in the way intended: a literal diagnostic test. If the results come back with any deviation, an error, the replicant is retired. Replicants become interchangeable, disposable.

By discarding the Voight-Kampff in favor of the Baseline Test, the film makes an insightful albeit underdeveloped point about the eugenics-debilitation circuit. Both tests enforce control of their populations through surveillance, but while the Voight-Kampff as a test was a

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[280] “The Baseline Test, *Blade Runner 2049*, directed by Denis Villenueve (2017; Burbank, CA: Warner Bros.), Blu-ray.

symbol of unmasking of the replicant, the Baseline Test encourages masking, the masking of empathy in favor of productivity. The replicant that has no empathy is valued, then, for the very thing that separates it from humanity, its non-value. This is debilitation in its final form: the deliberate disabling of certain populations (in this case, replicants) in order to maintain them as a labor force.

Recalibrating the Metaphor: Janelle Monáe and Self-Diagnosis

I mentioned at the beginning of this chapter that I did not want to align autistic or developmentally disabled individuals too closely with androids. To do so would introduce two potential problems: one, historically, alignment with machines has been used to devalue and to dehumanize disabled people in the past. I am certainly not implying that autistic people are another species, and as someone who is not autistic, I cannot speak for actual autistic experiences, only the medical and science fiction metaphorization of autism and other neuroatypical conditions. Two, to stick too closely to the metaphor invites a flattening of the experience of autistic and other developmentally disabled people: it is not for nothing that all of the androids I have mentioned thus far are coded as white. To break my own reliance on the metaphor here, I would like to conclude this chapter with a brief look at another science fiction text(s) that will perhaps recalibrate the metaphor to include new possibilities as well as explore the answer to the third question I posed at the end of the interchapter: what role does self-diagnosis play in narratives about disability, real or fantastic?

Until recently, Janelle Monáe performed her music almost exclusively under the alter ego of Cindi Mayweather, a time traveling android dissident from Kansas City in the year 2719. Her first four albums—*Metropolis: The Chase Suite* (2007), *The ArchAndroid* (2010), *The Electric*

Lady (2013), and *Paper Gods* (2015)— follow the adventures of Cindi as she goes on the run from the authorities, first for falling in love with a human and then gradually moving into resistance against a fascist regime. Although her fifth and most recent album is not performed under the Cindi Mayweather persona, *Dirty Computer* (2018) still maintains a relationship to the android/cyborg perspective through the character Jane, a human who has been classified as a "dirty computer" due to her socially deviant behavior. Monáe's music itself has a cyborg quality; she effortlessly joins pop, R&B, jazz, soul, and funk together to create a prismatic lens—a genre she calls "cybersoul"[281]— through which to explore various assemblages of sexuality, race, and gender. Many of these albums and songs were accompanied by what Monáe calls "emotion pictures" or short films and music videos that add a visual layer to the android narratives of the music.

Monáe, an avid science fiction fan as well as creator, employs the metaphor of the android deliberately in her work. In an interview with *Q* in 2011, she explains how her android persona and her use of science fiction tropes defamiliarize narratives about race, gender, and sexuality:

> I speak about androids because androids represent, to me, a new form of 'the other.' And I love speaking about the future because it gives us all a chance to rewrite history and do what's right—or continue to do what's wrong, and oppress those we don't understand, oppress those who may not look like us. I think it's important that those issues or subjects are still being brought to the forefront. I mean, you can parallel it all to being an immigrant in today's United States, or just being the minority in the majority. So, Cindi represents the heart, the mediator between the mind and the hands.[282]

The phrase "mediator between the mind and the hands"— a favorite quote of Monáe in interviews—is a direct reference to Fritz Lang's silent film *Metropolis* (1927), a film featuring

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[281] Janelle Monáe, liner notes, *Metropolis*, Bad Boy Records, 2008.

[282] Monáe, "Archandroid Janelle Monáe in Studio Q," interview by Jian Ghomeshi, *Q*, CBC, June 8, 2011, Video, 27:58, https://www.youtube.com/watch?v=KMxQEIGmDww.

an evil android imposter used by capitalist industrialists to manipulate the masses. For Monáe, the metaphor of the android is multifaceted and flexible. One of the aims of many Afrofuturist and Africanfuturist[283] writers and artists is to reject the Enlightenment conception of *human* altogether: “When the ‘human’ is nothing but the historical entitlement of white supremacy, signifying an embodied technology of exclusion, there is little reason to invest within the very same paradigm that was once deployed to systematically oppress and enslave one’s ancestors.”[284] In this way, Monáe is reclaiming the android-as-other metaphor: androids are *preferable* to humans in her music. The term *android* then has a parallel to self-diagnosis, an inversion of the diagnostic gaze as a tactic against a strategy of control. The connection between Monáe’s disidentification—to borrow a term from Muñoz[285]— of the android metaphor is not subtle. Her music often emphasizes the intertwining of social, technological and medical discourses as a strategy of capitalist control of the populace.

Monáe explores how medical discourses have debilitated Black queerness in *Dirty Computer*. The album was released along with a fifty-minute *Emotion Picture* that featured an interconnected narrative created from a series of music videos from the album.[286] The film opens with a voiceover by Jane (Monáe) about the blurring of biological and technological discourses in this imagined future: “They started calling us computers. People began vanishing and the cleaning began. You were dirty if you looked different. You were dirty if you refused to live the way they dictated. You were dirty if you showed any form of opposition at all. And if you were

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[283] Afrofuturism is specifically concerned with a tradition of American Black science fiction. Many African writers, such as Nigerian-American (Naijamerican) author Nnedi Okorafor, make a strong distinction between Afrofuturism and Africanfuturism as working within two different traditions. Nnedi Okorafor, “Africanfuturism Defined,” *Nnedi’s Wahala Zone Blog*, October 19, 2019, http://nnedi.blogspot.com/.

[284] Tobias C. Van Veen, “Vessels of Transfer: Allegories of Afrofuturism in Jeff Mills and Janelle Monáe,” *Dancecult: Journal of Electronic Dance Music Culture* 5, no. 2 (2013): 10, doi: 10.12801/1947-5403.2013.05.02.02.

[285] José Esteban Muñoz, *Disidentifications: Queers of Color and the Performance of Politics*, 13.

[286] Much like Beyonce did for her album *Lemonade*.

dirty, it was only a matter of time."[287] In the film, this "cleaning" involves a process in which two technicians erase memories from the dirty computer, in much the same way someone might delete files from their computer's hard drive.

This evokes both medical and technological discourses: Jane is strapped to a gurney, referred to as a patient, and is given a medicine in gas form to help her comply (institutionalization). However, the technicians interact with and edit her memories through a technological interface. They see her memories (visualized by music videos) on a monitor and select which ones must be erased. The memories considered dangerous or dirty often have to do with celebrations of queerness (especially femme queerness), Blackness, polyamory, femininity or all of the above. In fact, the process seems to be designed to make everyone fit into a specific mold. Zen (Tessa Thompson), Jane's lover who was captured and cleaned before her, no longer remembers Jane or her name. Instead, she introduces herself as Mary Apple 53 and tells Jane that she will also be named Mary Apple 54 at the end of the process. She tells Jane that she has some bugs, bugs that can only be fixed through what is essentially a medical process. Jane even must learn to walk again, a metaphor for the ways in which the process has attempted to conform her to hegemonic norms through a rebirth process.[288]

Unlike the androids of Dick and Scott, Jane does not actively seek to hack or pass as human. Her threat to the social order actually comes from her inability to replace humans (read as white and straight). By surviving and thriving as Black, queer, anti-capitalist androids, she directly challenges the paranoia of straight male white science fiction writers like Dick. Through self-diagnosis, the android celebrates its alterity, robbing the diagnostic gaze of its power. Rather

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[287] Monáe, Janelle, *Monáe - Dirty Computer [Emotion Picture]*, YouTube, April 27, 2018, video, 48:37, https://www.youtube.com/watch?v=jdH2Sy-BlNE.

[288] Monáe, Janelle, *Monáe - Dirty Computer [Emotion Picture]*.

than the “semantic fog” of Luba Luft, a tactic which ultimately fails because it cannot be sustained, Jane embraces a tactic of creating slippage between the diagnostic category and the embodied experiences that she claims best exemplifies that category. By redefining what is preferable, Monáe rejects the unyielding categories of abled/disabled and human/android.

Interchapter: HEALTHCARE

CW: medical trauma, medical bias, references to racism, sexism, homophobia, transphobia

"This is more than just about health care. It is about the character of our country. It's about whether we look out for one another. It's about whether the wealthiest nation on Earth is gonna make sure that nobody suffers, nobody loses everything they've saved, everything they've worked for because they're sick."[289]

"The question is, who is responsible for your ordinary healthcare? You or somebody else? When you get the flu, when you break an arm, is it your responsibility to take care of that or somebody else's? And that gets to the fundamental right, right? Because if you have the right to life, liberty and the pursuit of happiness, that really just requires me not to do anything to or for you. Pretty much stay out of your way. If you have a right to healthcare as a fundamental human right, that creates a burden on someone else to provide it to you…. And that is where I don't think we have grasped as a society that that is the real big issue here. And I wish it were. Because if we could nail it down to the Jimmy Kimmel example, there is a basis for an agreement, which is everybody agrees that if your kid is born with those conditions, we will come together as a community to make sure that we can take care of that. But that doesn't mean we want to take care of the person, or should be required to take care of the person who sits home, drinks Coca-Cola, no offense, drinks sugary drinks and doesn't exercise and eats poorly and gets diabetes. Is that the same thing as Jimmy Kimmel's kid? And I don't think that it is."[290]

There is a long running joke on social media platforms like Twitter and Reddit that goes like this: when Peter Parker is bitten by a spider in Sam Raimi's 2002 film *Spider-Man*, he elects to go home and take a nap rather than go to a doctor to be treated for what is clearly a serious injury because he does not have health insurance.[291] However, this dilemma does not just play out in science fiction: the trend of avoiding the healthcare system altogether except in dire emergencies is on the rise in the US: according to a 2018 survey conducted by 20/20 Research, 64% of Americans reported delaying or foregoing medical care because of high medical

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[289] Barack Obama, "The Record: President Obama on Health Care in America," The Obama White House, January 6, 2017, video, 1:44, https://www.youtube.com/watch?v=0KFzfvbanc0&t=132s.

[290] Mick Mulvaney, "LIGHT 2017: The Future of Healthcare Delivery," Roam Analytics, May 12, 2017, video, 55:00, https://www.facebook.com/roamanalytics/videos/772827716227679/.

[291] One example of this joke: Movie Pollz (@moviepollz), "oh jesus H. look at the size of that spider bite. Why didn't Peter Parker go to a hospital? Cause he probably has no health insurance…," Twitter, June 30, 2019, https://twitter.com/moviepollz/status/1145431789051228164?lang=en.

expenses.[292] It is not just the high cost of medical care that deters people in the US from seeking treatment: between the difficulty of getting a quote on a price for a medical procedure or treatment upfront, navigating the complexity of the relationship between insurance companies and providers, and the increase in deductibles triggered by the ACA, the healthcare is often a labyrinth of inaccessible systems for many.[293] This trend leads to heartbreaking stories like the one in 2018 of a 45 year old woman whose leg was trapped in a subway gap at a Boston train station. Despite her leg being bloody and twisted, her thigh bone exposed, she reportedly pleaded with bystanders not to call an ambulance, saying that "it's $3000. I can't afford that."[294]

How did the US healthcare system become so inaccessible? As demonstrated by the two quotes at the beginning of this interchapter, a deep and often partisan divide exists in the US on the ethical and social ramifications of healthcare coverage. As in the first quotation at the beginning of this chapter from former President Obama, there are many people in the US (often ideologically aligned with the left) who believe that healthcare is a universal human right and should be easily accessible. On the other, there are many people (often ideologically aligned with the right) who, like in the quotation from former Director of the Office of Management and Budget Mick Mulvaney, believe that healthcare is like any other commodity in a capitalist system and that medical accessibility is an individual responsibility. Numerous and varied beliefs exist between these two, but the fierce struggle of these two diametrically opposing political

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[292] Sara Heath, "64% of Patients Avoid Care Due to High Patient Healthcare Costs," *Patient Engagement HIT*, February 15, 2018, https://patientengagementhit.com/news/64-of-patients-avoid-care-due-to-of-high-patient-healthcare-costs.

[293] Zarek C. Brot-Goldberg et al, "What does a Deductible do? The Impact of Cost-Sharing on Health Care Prices, Quantities, and Spending Dynamics," National Bureau of Economic Research, 2015. doi:10.3386/w21632.

[294] N'dea Yancey-Bragg, "'I can't afford that': Woman trapped by subway train begs bystanders not to call ambulance," *USA Today*, July 3, 2018, https://www.usatoday.com/story/news/nation-now/2018/07/03/video-rescue-woman-trapped-injured-boston-subway/756068002/.

goals over the course of the 20th and 21st century has shaped the US healthcare system into the most complex, confusing, and expensive institutions in the world.

In fact, US healthcare, both practically and discursively, is difficult to discuss in any depth over twenty pages. In a system that has been described by economist Henry J. Aaron as "an administrative monstrosity, a truly bizarre mélange of thousands of payers with payment systems that differ for no socially beneficial reason, as well as staggeringly complex public systems with mind-boggling administered prices and other rules expressing distinctions that can only be regarded as weird,"[295] any attempt to contextualize or even describe certain aspects might result in gross simplification, more questions than there are answers, or accusations of political partisanship.

However, one thing is for certain: there is a lot of money in US healthcare. The US spends almost 20% of its GDP on healthcare—nearly twice that of any other wealthy country.[296] Medical debt currently is the largest source of debt that US citizens owe debt collection agencies; one recent study estimated that unpaid medical debt in the US in 2019 was around $140 billion[297] and is the leading cause of bankruptcy in the US. In 2017, the Milliman Medical Index estimated for a family of four on an employer based PPO (the most common form of health insurance in the US) that the cost of total spending on healthcare—total spending includes both premiums and out-of-pocket expenses—around $26,944, over triple the estimated $8,414 in 2001.[298] Not even

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[295] Henry J. Aaron, "The Costs of Health Care Administration in the United States and Canada — Questionable Answers to a Questionable Question," *New England Journal of Medicine* 349, no. 8 (2003): 801, doi: 10.1056/NEJMe030091.

[296] Elisabeth, Rosenthal, *An American sickness: how healthcare became big business and how you can take it back* (New York: Penguin Press, 2017): 1.

[297] Raymond Kluender et al., "Medical Debt in the US, 2009-2020," *JAMA* 326, no. 3 (2021): 255, doi:10.1001/jama.2021.8694.

[298] Uwe Reindhardt, *Priced Out: The Economic and Ethical Costs of American Health Care*, (Princeton: Princeton University Press, 2017): 42.

the advent of the Affordable Care Act, colloquially known as Obamacare, in 2010 has been able to stem the continued increase in healthcare costs, both at an institutional or an individual level.

The cost of healthcare for Americans unlucky enough to need access in any given year (or over the course of many years) is infamous. These costs to the patient-consumer can have a snowball effect on other areas of wealth accumulation as well.[299] One study concluded that even with health insurance, an admission to a hospital negatively impacts income for years afterwards.[300] The financial disparity between those with health insurance and those without health insurance is also vast and impacts racial and ethnic minorities much more than it does white residents.[301] Ironically, medical debt is also associated with a decrease in quality of life that would lead to health: declining mental health, poor nutrition, unemployment, unhousing, etc. In fact, the cost of healthcare in the US is so high, that many people, even those with health insurance, regularly delay getting health care for very treatable illnesses simply because they cannot afford it.[302]

In order to understand how healthcare in the US is so expensive, we must examine how these systems have commodified almost every aspect of medical care, from the doctor who must decide which procedure to perform or medication to prescribe, to hospitals who price said procedures, to the codes who decide how the procedure should be coded, to the insurance claims adjuster who decides if the procedure is covered under a patient's plan. I originally entitled this

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[299] Liz Hamel et al., "The Burden of Medical Debt: Results from the Kaiser Family Foundation/New York Times Medical Bills Survey," *Kaiser Family Foundation*, January 5, 2016, https://www.kff.org/report-section/the-burden-of-medical-debt-section-3-consequences-of-medical-bill-problems/.

[300] Carlos Dobkin et al, "The Economic Consequences of Hospital Admissions," *American Economic Review* 108, no. 2 (2018): 308, doi: 10.1257/aer.20161038.

[301] Heeju Sohn, "Racial and Ethnic Disparities in Health Insurance Coverage: Dynamics of Gaining and Losing Coverage Over the Life-Course, "*Population Research and Policy Review* 36, no. 2 (2017): 181, doi:10.1007/s11113-016-9416-.

[302] Zarek C. Brot-Goldberg et al, *What does a Deductible do? The Impact of Cost-Sharing on Health Care Prices, Quantities, and Spending Dynamics*, 2.

interchapter INSURANCE, but I discovered as I researched and wrote that my attempts to isolate a discussion of the commodification of human health in the US to one facet of the system ignored the ways in which all aspects—insurance corporations to pharmaceutical companies to medical professionals and hospitals—form an elaborate series of "feedback loops into the profitability of debility."[303] Instead, I have entitled the interchapter HEALTHCARE to emphasize the interconnectedness of these systems into an industry designed to debilitate certain populations in order to extract profit.[304]

"The Dividual" and Symbiotic Capitalism

Let's revisit Puar's "feedback loops into the profitability of debility" as a framework for illustrating the symbiotic relationship between different healthcare institutions. Feedback loops are one of those mechanical metaphors that comes from the field of cybernetics but has found itself used in biological, medical, and sociological discourses to describe various mechanisms of homeostasis.[305] At its most basic, a feedback loop is a system in which some or all of the output becomes input. Hayles argues that informational feedback loops in cybernetics have led to the concept of reflexivity: "Reflexivity is the movement whereby that which has been used to generate a system is made, through a changed perspective, to become part of the system it generates."[306] Feedback loops are also a feature of autopoiesis, a biological concept that

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[303] Puar, *The Right to Main: Debility, Capacity, Disability*, 25.

[304] It is important to note here the difference between the word *healthcare* and the phrase *health care.* While the two terms have been used interchangeably by economists, politicians, policy writers, and journalists alike, the former refers to the industry of health whereas the latter refers to the actual delivery of care or to individuals or groups. Thus, I have chosen to focus on the industrial implications of healthcare in my usage.

[305] Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*, 7.

[306] Hayles, 8.

describes an organism's ability to maintain itself and its boundaries through production and regulation.

Capitalism itself relies on feedback loops to maintain itself. By creating enclosure and artificial scarcity, the system restricts participants' access to basic resources like food, medical care, housing, etc., thereby preventing independence from the system. The feedback loop goes something like this: by restricting access to independent subsistence, the system asks for a currency in exchange for basic resources, forcing people to seek wages in that currency in order to access those resources. This process of commodifying certain resources relies on what Puar, building on Foucault’s and Deluze’s work, calls “oscillations" between a disciplinary society and a control society.[307] While disciplinary societies focus on institutions of punishment as a mechanism to regulate disorder, control societies seek to create order through the creation of discrete and ever fluctuating categories.[308] Capitalism is not designed to meet human needs, but rather to extract as much profit from an individual as possible.

Feedback loops are a useful framework for examining the methods of production and regulation of the healthcare sector because they describe how these industries recreate individuals into "systems that can be assembled and disassembled rather than an entity whose organic wholeness can be assumed."[309] The healthcare sector accomplishes this dividuation through the diagnostic gaze, i.e. through identification of an individual by their categorization within the diagnostic framework. Almost all sectors of the healthcare system rely on medical coding, the transformation of medical procedures, diagnoses, services, and equipment into universal alphanumeric codes. Deluze identified this process back in 1990, calling it “the

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[307] Puar, *The Right to Maim*, 20.
[308] Puar, 21.
[309] Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*, 160.

substitution of individual or numbered bodies of coded 'dividual' matter to be controlled [sic]."[310] By reducing a bodymind to its components via a system of codes or diagnoses, healthcare systems can debilitate, exploit, and profit from those components.

One consequence of this dividuation of human beings is what I will call *symbiotic capitalism*. Different industries work together to make a profit through dividuation, creating a feedback loop within certain sectors. Nowhere is this more apparent than within the healthcare sector, where access to treatment often relies on the navigation of several industries or institutions, all of which specialize in certain aspects of care and are entangled with one another. Hospitals, doctors, pharmaceutical companies, insurance providers, medical device manufacturers, and even the US government all participate in a complex series of feedback loops in order to profit from patients. The next three sections of this interchapter are devoted to discussing how these different institutions commodify the dividual, entangled with one another to create feedback loops in which patients find themselves.

Insurance, Medical Professionals, and Hospitals

One of the more infamous feedback loops in the US healthcare system is that between hospitals, medical professionals, and health insurance institutions, both private and public.[311] At

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[310] Gilles Deleuze, "Postscript on the Societies of Control," *October* 59 (1992): 4, http://www.jstor.org/stable/778828.

[311] As mentioned at the beginning of this interchapter, the expense, complexity, and bureaucracy of health insurance in the US is infamous. There are really five major branches of healthcare payers in the US. The first three are public options, meaning that they are paid through government agencies. Medicare is for elderly US citizens over the age of 65. Medicaid is a federal insurance program for low income and disabled individuals. The Children's Health Insurance Program (CHIP) is for children of families whose income exceeds the thresholds for Medicaid but who need extra assistance for pediatric health insurance. These three public programs form the basis of the US "safety net" for those individuals considered most vulnerable: the government pays the medical bills for qualified and enrolled individuals through these three programs. The last two insurance options, which cover the vast majority of insured Americans, are both private options, which means that they are covered by private insurance companies and paid either completely or in part by individuals. The most common by far in the US is employer-based preferred provider (PPO) insurance. This is a health insurance plan purchased from a private insurance company by an employer and offered to their employees at a subsidized price. For those who do not qualify for the public insurance

its core, private insurance as a concept works like a wager. You, as a consumer, pay the insurance company a premium in case of a medical emergency. In turn, the insurance company wagers that you will not need to access medical resources during that year that you are covered by their policy. If you do need to access medical resources, then the insurance company has lost the wager and will need to pay your claim. Of course, in reality, it is more complex than that, but the overall point is that the insurance company makes a profit if it takes in more money from consumers (through charging premiums) than it pays out in claims. There are two primary ways that insurance companies make money: underwriting and investment income. Insurance companies pool premiums paid by their customers and then pay claims out of that pool. Anything left over can be invested in stocks, bonds, etc. to make even more of a profit for the company's investors. Even before the COVID-19 pandemic, health insurance companies were making a large profit. During the beginning of the pandemic, this figure went up substantially: United Healthcare, one of the largest insurance corporations in the US, had a record 2020 first quarter growth of 6.8 percent, bringing in 64.42 in revenue in that quarter and were able to use 1.7 million of those funds to buy back 6.2 million shares of its own stock.[312] How were they able to do this? One major revenue stream is through their deals with hospitals, a common healthcare business arrangement.

The truth of the matter is that insurance companies pay medical providers–doctors, hospitals, etc.–for performing procedures, a system that encourages medical providers to bill

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options and have no employer-based insurance—i.e., those who are suddenly unemployed or who work part-time, gig jobs, etc.—there is the option of purchasing health insurance directly through insurance companies. The ACA attempted to make this option more accessible through the creation of the healthcare Marketplace and COBRA.

[312] Mark Kreidler, "Hand over Fist: Health Insurers make a Killing During Contagion," *Capital and Main*, June 22, 2021, https://capitalandmain.com/health-insurers-make-a-killing-during-contagion-0622 and "UnitedHealth Group Provides Expansive Support to COVID-19 Response Efforts, Reports Balanced First Quarter Performance," *Business Wire*, April 15, 2020, https://www.businesswire.com/news/home/20200415005213/en/UnitedHealth-Group-Expansive-Support-COVID-19-Response-Efforts.

more rather than less.[313] Prescribing unnecessary procedures and tests–and overcharging for necessary ones–plagues the industry. Many of us know or have read horror stories of people being presented with outrageously high bills from hospitals after life-saving treatment. There's the story of a woman who miscarried and received bills totaling $257,000.[314] There are stories about the hundreds of thousands of dollars–or in one case, $1 million–owed by the families of people who died from COVID-19 or who were hospitalized for COVID-19 themselves.[315] There is even one family who was charged $1,877.86 for an ear piercing that a surgeon did while their five-year old daughter was under anesthesia.[316] Every day, it seems like there is another news story about exorbitant prices for health care, the long term effects of which can have enormous economic impacts on individuals and families alike.[317]

None of these stories are isolated incidents, and they often result from surprise billing, arbitrary pricing from hospitals and insurance companies, and the lack of transparency in the negotiations between the two. Hospitals make a lot of money: former physician and journalist Elizabeth Rosenthal notes that between 1997 and 2012, "the cost of hospital services grew 149%, while the cost of physician services grew 55%."[318] Most hospitals in the US are non-profits, so their excess income goes towards perks, administrative spending, and surplus,[319] but for-profit

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[313] Marshall Allen, "Unnecessary Medical Care is More Common than You Think," *ProPublica*, February 1, 2018, https://www.propublica.org/article/unnecessary-medical-care-is-more-common-than-you-think.

[314] Sarah Kliff, "Their Baby Died in the Hospital. Then Came the $257,000 Bill," *The New York Times*, September 21, 2021, https://www.nytimes.com/2021/09/21/upshot/hospital-bills.html.

[315] Sarah Kliff, "Covid Killed His Father. Then Came $1 Million in Medical Bills," *New York Times*, May 21, 2021, https://www.nytimes.com/2021/05/21/upshot/covid-bills-financial-long-haulers.html.

[316] Marshall Allen, "A Hospital Charged $1,877 to Pierce a 5-Year-Old's Ears. This Is Why Health Care Costs So Much," ProPublica, November 8, 2017, https://www.propublica.org/article/a-hospital-charged-to-pierce-ears-why-health-care-costs-so-much.

[317] Hamel et al., "The Burden of Medical Debt: Results from the Kaiser Family Foundation/New York Times Medical Bills Survey."

[318] Rosenthal, *An American sickness: how healthcare became big business and how you can take it back*, 23.

[319] Rosenthal, 23.

hospitals now account for nearly a quarter of all hospitals in the US.[320] For-profit hospitals make money for their investors: it is no wonder that care has become more commercialized.[321]

However, as recent healthcare journalists have argued, the high prices cannot be blamed on hospitals alone, but on the symbiotic feedback loop between hospitals and insurance companies. Most insurance companies negotiate prices and what they will cover directly with hospitals and physicians, a process that is often obscured and secretive. While it might seem counterintuitive for insurance companies to agree to pay such exorbitant prices–after all, shouldn't they be trying to make the best deal with the hospital possible to save money–they actually make more money if hospitals charge patients large sums if they have accurately built high costs into the premium they charge patients. One healthcare journalist, Marshall Allen, writes, "Let's say administrative expenses eat up about 17 percent of each premium dollar and around 3 percent is profit. Making a 3 percent profit is better if the company spends more. It's like if a mom told her son he could have 3 percent of a bowl of ice cream. A clever child would say, 'Make it a bigger bowl.'"[322] Even though the Affordable Care Act mandated that insurance companies must spend at least 80% of premiums towards medical care, most insurance companies have found a loophole: charge more in premiums and that 20% profit becomes larger.[323] No one, not insurance companies or hospitals, are encouraged to bring prices down because the system works too well to make everyone involved money.

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[320] By comparison, public government owned hospitals now only make up 18.5%. Cory E. Cronin et al., "For-profit hospitals have a unique opportunity to serve as anchor institutions in the US," *Preventative Medicine Reports* 22 (2021): 1, https://www.sciencedirect.com/science/article/pii/S2211335521000620.

[321] Rosenthal, *An American sickness: how healthcare became big business and how you can take it back*, 29.

[322] Marshall Allen, "Why Your Health Insurer Doesn't Care About Your Big Bills," *Propublica*, May 25, 2018, https://www.propublica.org/article/why-your-health-insurer-does-not-care-about-your-big-bills.

[323] Allen.

Part of this profit (or surplus in the case of non-profits) comes from optimizing the pricing of services based on what a hospital or other health provider believes that an insurance company–or Medicare–will pay: “hospital reimbursement is a strategic puzzle.”[324] Hospitals long ago figured out how to bill patients more than the actual cost of procedures,[325] but they also maximize profit through charging unnecessary medical procedures and through a process called “upcoding.” “Upcoding” is a process that involves manipulating the coding process that facilitates and underlies all communications between healthcare entities. It is here that we can once again clearly see the “dividual,” the process of breaking down an individual into their ailments through literally assigning them a code. Coding has also become its own lucrative field in the US, with hospitals, insurance companies, and medical consulting agencies all training thousands of employees in how to code and how to decipher code: “Medical coding is a cryptic and constantly evolving numerical language through which the things that are done to you in a hospital or other medical office are expressed on claims and bills.”[326] Coding reduces the individual to a set of numbers, and allows the symbiotic feedback loop to move those numbers from hospital to insurance company to employer to patient and back again. Although there have been instances of hospitals who upcode being charged with fraud–especially if the hospital begins billing for procedures that never happened–it is difficult to prove upcoding because the actual cost of procedures is almost never reflected in the actual number charged to the insurance company.[327]

No wonder many patients are afraid to participate in this system.

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[324] Rosenthal, *An American sickness: how healthcare became big business and how you can take it back*, 33.
[325] Rosenthal, 33.
[326] Rosenthal, 172.
[327] Mary Williams Walsh, “A Whistle-Blower Tells of Health Insurers Bilking Medicare,” *The New York Times*, May 15, 2017, https://www.nytimes.com/2017/05/15/business/dealbook/a-whistle-blower-tells-of-health-insurers-bilking-medicare.html.

Pharma, Doctors, and Insurance

In 2015, there was a public outcry about the sudden steep rise in the price of a medication called Daraprim, a lifesaving treatment for parasitic infections and a malaria preventative. The increase was astronomical: from $13.50 a tablet to $750, an almost 556% increase. At the center of the controversy was Martin Shkreli, the founder and CEO of Turing Pharmaceuticals. Turing had purchased Daraprim in August of 2015 and immediately raised the price, a tactic long used by Shkreli to turn a profit in his other pharmaceutical company, Retrophin.[328] Shkreli's tactics and his cavalier responses to criticism were called into question by medical professional organizations, politicians, doctors, hospitals, and the public alike, earning him the nickname "Pharma Bro."[329] He claimed that the price increase was in line with industry standards and that the money made from the drug–which he claimed was not in high demand–would go towards researching better options for treatment.[330] However, medical professionals and infectious disease specialists countered that there was no need for better treatment options: Daraprim is a good standard of care for these conditions.[331] Although Shkreli and Turing did eventually promise that they would lower the price of Daraprim, current prices remain at or around the $750 a pill price point, even for generic versions of the drug, potentially making Turing hundreds of millions of dollars in profit.

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[328] Andrew Pollack, "Drug Goes From $13.50 a Tablet to $750, Overnight," *The New York Times*, September 20, 2015, https://www.nytimes.com/2015/09/21/business/a-huge-overnight-increase-in-a-drugs-price-raises-protests.html.

[329] Eric Owles, "The Making of Martin Shkreli as 'Pharma Bro,'" *The New York Times*, June 22, 2017, https://www.nytimes.com/2017/06/22/business/dealbook/martin-shkreli-pharma-bro-drug-prices.html.

[330] Pollack, "Drug Goes From $13.50 a Tablet to $750, Overnight."

[331] Pollack.

Shkreli is perhaps the most high-profile example of price gouging in the pharmaceutical industry, but he is far from the only one. Medications for tuberculosis, diabetes, cancer, high cholesterol, among many other life-threatening conditions, have a high cost in the US healthcare system.[332] The pharmaceutical industry also exists in its own feedback loops with doctors, hospitals, and insurance companies. Pharmaceutical representatives are notoriously aggressive about meeting with medical professionals to pitch new medications for treatment. Studies have shown that doctors who receive payments or other benefits from pharmaceutical companies tend to prescribe more medications promoted by those companies: "on average, across all drugs, providers who received payments specifically tied to a drug prescribed it 58% more than providers who did not receive payments."[333]

Insurance companies can make this more difficult too. Denying coverage for a medication that is deemed unnecessary or that has a generic substitution–something that is not always reliable–is common practice. In a 2014 study conducted on what psychiatrists believe medication barriers are for their patients, the most frequent responses involved insurance barriers like prior authorization (the requirement that a physician obtain approval from the insurance company before prescribing a course of treatment) and formulary restrictions (the practice of the insurance company requiring the substitution of a generic drug for a brand name drug).[334] This leads to many patients going without or rationing their medication in order to afford it.[335] One

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[332] Stephen Barlas, "States Try to Control Medicaid Pharmaceutical Costs," *Pharmacy and Therapeutics*, 40, no. 4 (2015): 260, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4378518/.

[333] Hannah Fresques, "Doctors Prescribe More of a Drug If They Receive Money from a Pharma Company Tied to It," *Propublica*, December 20, 2019, https://www.propublica.org/article/doctors-prescribe-more-of-a-drug-if-they-receive-money-from-a-pharma-company-tied-to-it.

[334] Ruth S. Shim et al., "Datapoints: Psychiatrists' Perceptions of Insurance-Related Medication Access Barriers," *Psychiatric Services* 65, no. 11 (2014): 1296, doi.org/10.1176/appi.ps.201400267.

[335] Patty Neighmond, "When Insurance Won't Cover Drugs, Americans Make 'Tough Choices' About Their Health," *NPR*, January 27, 2020, https://www.npr.org/sections/health-shots/2020/01/27/799019013/when-insurance-wont-cover-drugs-americans-make-tough-choices-about-their-health.

high profile example of this is insulin rationing. When testifying in front of Congress on insulin rationing due to high prices, Kasia J. Lipska, a researcher at Yale Diabetes Center, revealed that her study found that one in four people with diabetes ration insulin and, as a result, have difficulty managing the condition unlike those who do not ration their insulin.[336] The high price of insulin is partially due to a monopoly on the medication by three pharmaceutical companies–Novo Nordisk, Sanofi-Aventis, and Ellis Lilly–but it is also due to the fact that insulin is an essential medication. Without it, people with diabetes would die.[337] These patients are caught in the feedback loop: on the one hand, the pharmaceutical companies who make insulin are unconcerned about the growing number of people who ration because they make a profit off anyway from what those people can afford as well as the people who can afford enough of the product. On the other hand, those same companies have a vested interest in maintaining their market share, so they continue to invest in new formularies of insulin[338] in order to maintain their control of the patent, thus debilitating an entire population of people and converting their condition into a profitable enterprise.

Lifestyle vs. The US Healthcare system

Of course, diagnosis forms the basis of medical discourses, so it should be no surprise to us that it also forms the basis of healthcare discourses as well. Diagnosis, conceptually and practically, is a vital part of insurer’s cost/benefit analysis. One big potential cost for insurance companies lies in consumers with *preexisting conditions*: chronic diagnoses that pre-date

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[336] Kasia Lipska, Testimony submitted for hearing, “Priced Out of a Lifesaving Drug: The Human Impact of Rising Insulin Costs,” *House Energy and Committee* website, docs.house.gov/meetings/IF/IF02/20190402/109502/HHRG-116-IF02-Wstate-LipskaMDK-20190402.pdf. Published April 2, 2019. Accessed August 20, 2019.

[337] S. Vintcent Rajkumar, “The High Cost of Insulin in the United States: An Urgent Call to Action,” *Mayo Clinic Proceedings* 95, no. 1 (2020): 23, doi.org/10.1016/j.mayocp.2019.11.013.

[338] Rajkumar, 23.

enrollment in the insurance plan. If a patient has asthma, a heart condition, autism, cancer, diabetes, or any other disability or chronic disorder or disease, they are more likely to need to access the healthcare services covered by their insurance plan than someone who is non-disabled. That patient will cost the insurance company more in claims. It is estimated that in 2018, 27% of nonelderly adults in the US had an ongoing health condition, many of whom would have been denied healthcare coverage by insurance companies (or been forced to pay higher premiums) if they found themselves without coverage before the enactment of the ACA in 2014.[339] This number is only estimated to grow with the numerous health issues caused by the COVID-19 pandemic and Long COVID. Pre-existing conditions are politically charged, as we can see from Mulvaney's quote at the beginning of the interchapter. While Mulvaney would seem to agree that a pre-existing condition such as a congenital heart defect (the diagnosis of Jimmy Kimmel's child) should not be cause for an insurance company to deny or raise the bar for access for care, he ties certain diagnoses like diabetes to personal behavior, drawing on fatphobic and racialized discourses popularized by Ronald Regan's "welfare queen" in the 1970s and '80s.

Those who lean more towards the idea that healthcare is a human right, however, believe that no pre-existing condition should be stigmatized in this way: in fact, the ACA banned the practice of underwriting based on pre-existing conditions in 2010. The enforcement of this ban has been problematic to say the least. For one thing, the ban does not seem to apply to short term insurers.[340] For another, insurance companies have found other ways to pass on the cost of having a pre-existing condition to the insured. One way is to raise the premiums based on how

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[339] Gary Claxton et al., "Pre-Existing Condition Prevalence for Individuals and Families," *Kaiser Family Foundation*, October 4, 2019, https://www.kff.org/health-reform/issue-brief/pre-existing-condition-prevalence-for-individuals-and-families/.

[340] Jenny Deam, "He Bought Health Insurance for Emergencies. Then He Fell Into a $33,601 Trap," *Propublica*, May 8, 2021, https://www.propublica.org/article/junk-insurance.

expensive they believe the insured will be. Medical technology has allowed this surveillance to become even more intrusive. Some models of CPAP machines, devices used to treat sleep apnea, regularly send biometric information to patients' insurance companies in order to insure compliance.[341]

Slow Death, Biolabor, and Utopia

It is difficult to discuss feedback loops in the US healthcare system mainly because it is difficult to separate them out: all of these various institutions exist enmeshed with one another, incapable now of surviving in this system without each other in a continuous series of loops. Even the brief analysis I have accomplished above seems simplistic. Once one begins to see how these circuits work within these systems to divide and commodify individuals, however, it becomes easier to see these patterns with other healthcare institutions.

Perhaps not surprisingly, there are not many representations of these feedback loops or slow deaths in popular culture representations of the US healthcare system, because it simply does not fit into the dramatic representation of healthcare professionals saving lives. Who really wants to watch an hour of television or a film on the intricacies of HMOs versus PPOs and the inner lives of insurance claims adjusters? For one thing, there would be less sex in scrubs in on-call rooms. For another, dealing with healthcare coverage disrupts the hero's narrative that surrounds most medical dramas. Doctors in these dramas are superheroes: they advocate for their patients, run all the diagnostic tests to find out what mysterious disease their patient has, perform experimental life-saving surgeries pro-bono, and vow to learn from their few and far between mistakes. There is no discussion of what these heroic measures actually *cost*, nor how most of

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[341] Marshall Allen, "You Snooze, You Lose: Insurers make the Old Adage Literally True," *ProPublica*, November 21, 2018, https://www.propublica.org/article/you-snooze-you-lose-insurers-make-the-old-adage-literally-true.

these procedures and tests would set an individual or family back decades in terms of their economic viability.

Berlant defines *slow death* as "the physical wearing out of a population in a way that points to its deterioration as a defining condition of its experience and historical existence."[342] She argues that slow death is characterized by its "ordinariness" as opposed to the trauma of war or accident and exists within "temporalities of the endemic"[343] It is not surprising that Berlant ties slow death to chronic illness as an example. The history of healthcare in this country solidifies the definition of sickness as the "inability to work" or produce.[344] By tying health insurance to employment for many people in this country, health becomes the province of capitalism. Tying health insurance to employment has a number of consequences for healthcare coverage. First, it neglects to account for people who either do not work (retired people, unemployed people, for example) or who cannot work (disabled people, children, etc.). There are also numerous loopholes that allow employers to not offer healthcare to their employees, like hiring part time employees or "gig labor" that do not qualify for. And yet, "patients fund the entire health care industry through taxes, insurance premiums and cash payments. Even the portion paid by employers comes out of an employee's compensation."[345]

However, I would argue that slow death is also inherent to the healthcare system for certain populations in the US. Not everyone can take time off work or school to mediate disputes between a provider and an insurance agent. There are whole books and websites dedicated to the ordinariness of haggling with hospitals, insurance companies, and pharmacies for a more

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[342] Berlant, *Cruel Optimism*, 95.

[343] Berlant, 100.

[344] David Harvey, *Spaces of Hope* (Edinburgh: Edinburgh University Press, 2000), 106.

[345] Allen, "Why Your Health Insurer Doesn't Care About Your Big Bills."

reasonable price for health care.[346] Like with homelessness, hunger, and other specters of poverty wielded by capitalism to keep the working class in line, disability and sickness end up being a part of how health insurance works: "the work machine and the war machine both need bodies that are preordained for injury and maiming, often targeted maiming...Disability in these cases does not present any possibility of the reorganization of privilege; rather, it reinforces the stigma of lack of privilege."[347]

Given all of this, my three questions for the next chapter are the following: how does cruel optimism and slow death play into utopian narratives that are so common in science fiction? What can these narratives tell us about the intimate ties between bodyminds, biolabor, and healthcare? How can science fiction perhaps point us to ways of resisting the cruel optimism of progressive narratives?

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[346] See the last half of Rosenthal's book *An American sickness: how healthcare became big business and how you can take it back* (2017) for an example of this.
[347] Puar, *The Right to Main: Debility, Capacity, Disability*, 64.

Chapter Two: A Tale of Two Children: (Dys)topia and The Cruel Optimism of No-Where Science Fiction

CW: ableist language, slurs, medical trauma

Now Helva could see that the subtle, massive conditioning she'd received in her formative years was double-edged. It made her happy as a shell-person, it had dedicated her to her life in Service, and it made Pay-off a mockery.[348]

I'm done suffering in this place so that other people can go through the motions of living out their empty lives.[349]

As with progressive narratives, science fiction has had a storied and enthusiastic love affair with utopian narratives. The imaginative energy of fantastic world building, especially the future worlds of science fiction, lends itself to the creation of utopias rooted in place, asking the reader to evaluate the institutions of the present to create better practical futures, from the socialist egalitarian Federation of Planets in Gene Roddenberry's *Star Trek* (1966-1969), whose highest law forbids colonization, to the feminist American villages of Marge Piercy's *Woman on the Edge of Time* (1976), where labor is no longer gendered. Thomas Moore's proto-fantastic *utopia* (1516) forbids private property; the Terran Federation in Robert Heinlein's *Starship Troopers* (1959) is formed by the military elite. These texts, amongst many others, all center utopia as a fully realized place where characters live, albeit in an imagined space. Their narratives rely on optimistic views of future societies to critique the flaws of the present society, engaging with the reader in a what-if place that could exist, if colonization/money/gender/race/religion/hierarchy/central government/other social evil was removed from the equation.

These utopian narratives are often invested in the idea of improved public health, the advancement of medicine and medical technology, and the eradication of disability and disease

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[348] Anne McCaffrey, *The Ship Who Sang* (New York: Ballantine Books, 1969), 205.
[349] Vita Ayala, Germán Peralta and Matt Horak, *Age of X-Man: Prisoner X* (New York: Marvel, 2019), Kindle Edition.

as markers of a good society just as progressive narratives are. In fact, progressive narratives often co-opt the language of utopia, asking us to imagine a world in which disease, disability, scarcity, etc., no longer exist. But just like many progressive narratives, many utopian narratives are incapable of engaging in an effective critique of the processes of systemic power because they are too rooted in the idea that utopia is a place that can be arrived at, not a mechanism of change as Bloch or Muñoz have suggested.[350] They can critique contemporary institutions of power by imagining a world in which those institutions are changed or eradicated,[351] but because they are unable to critique the mechanisms by which their utopia is to be realized or the ways in which a utopia for some would be a dystopia for others.

In order to establish this framework, I will return to Le Guin's story. While the child in the basement serves as the focal point of the story, there is actually another child in the story. The final person described by the narrator before the race at The Green Fields begins is a child:

> A child of nine or ten sits at the edge of the crowd, alone, playing on a wooden flute. People pause to listen, and they smile, but they do not speak to him, for he never ceases playing and never sees them, his dark eyes wholly rapt in the sweet, thin magic of the tune.
>
> He finishes, and slowly lowers his hands holding the wooden flute.[352]

It is no accident that this child is the same age as the child in the basement. This child is characterized by a performance of innocence and sweetness: his silence, unlike the increasingly incoherent cries of the child in the basement, allows the adults around him to read these qualities onto his body via the music he plays. "The Symbolic Child," in this case, represents the continuing future of Omelas, what Edelman calls "reproductive futurism." If the Child represents "the fetishistic fixation of heteronormativity: an erotically charged investment in the rigid

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[350] Jose Esteban Muñoz, *Cruising Utopia: The Then and There of Queer Futurity,* 19.

[351] As Marge Piercy's *Woman on the Edge of Time* critiques centralized government and mental health institutions.

[352] LeGuin, "The Ones Who Walk Away from Omelas," 280.

sameness of identity,"[353] then the Omelan child playing the flute becomes emblematic of the continuation of Omelas as a utopia, a place where continuation of the same is valued over change towards something better. In fact, the narrator tells us that Omelan know "that if the wretched one were not there snivelling [sic] in the dark, the other one, the flute-player, could make no joyful music."[354] The safety and wellbeing of the disabled child in the basement is sacrificed for the safety and wellbeing of the children above.

Utopias like Omelas often posit general happiness, well-being, or cheerful affect as an end goal: after all, the child above is characterized by their "joy" and the children of Omelas, the narrator tells us, are "happy."[355] However, this optimism is often a cruel one, an attachment for which one must make an "affective bargain," to once again borrow the terminology of Berlant.[356]

I argued in the introduction to this project that science fiction also has the power to allow writers and readers to imagine both *otherwise* and *the same*. This double-vision of *the same* and *otherwise* within the same temporal space destabilizes utopian narratives through irony: "two or more meanings being played off, one against another. It [irony] plays between meanings, in a space that is always affectively charged, that always has a critical edge."[357] In "The Ones Who Walk Away from Omelas," the cheerfulness of these characters, a signifier of utopia, is deliberately juxtaposed with darker signaling of dystopia to create that double-vision of *the same* and *otherwise*. We generally think of utopia and dystopia as separate entities or tropes in science fiction, but texts like Le Guin's seem to indicate that sometimes one person's utopia is another

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[353] Lee Edelman. *No Future: Queer Theory and the Death Drive*, (Durham, Duke University Press, 2004), 20.
[354] LeGuin, "The Ones Who Walk Away from Omelas," 283.
[355] LeGuin, 278.
[356] Berlant, *Cruel Optimism*, 25.
[357] Jennifer Wagnor-Lawlor, *Postmodern Utopias and Feminist Fictions* (New York: Cambridge University Press, 2013), 72.

person's dystopia.[358] The two children, one happy and carefree and the other miserable and enduring a "slow death," exist together in what I will call the third option, a (dys)topia[359], a word that emphasizes the physical and discursive space of a utopia that must contain dystopia within itself, creating an affective charge between optimism and debilitation. In order to explore this relationship between cruel optimism and utopia, and to answer the first question posed in the last interchapter, I turn to texts by Anne McCaffrey, Annalee Newitz, and Vita Ayala that embrace the play of irony in (dys)topian spaces. An analysis of these texts together reveals a parallel discourse within US science fiction about the commodification of "the dividual" within healthcare systems and the progressive narratives that create the cruel optimism to disguise that commodification.

The Bodymind in the Ship: An Alternative Reading of *The Ship Who Sang* (1969)

Over the past decade, criticism of McCaffery's science fiction novel *The Ship Who Sang* (1969) has focused on a perceived erasure of disability from its imagined future. This project invites a reconsideration of criticisms of McCaffery's novel, presenting an alternate reading of the text as an ironic critique of utopian narratives. Most scholars read the society of *The Ship Who Sang* as a utopia, or at the very least, a society striving for utopia. McCaffery herself was very interested in utopia, writing her master's thesis at Radcliffe on the genre of fictional utopias with Eugene Ivanovich Zamiatin's novel *We* as a central feature.[360]

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[358] This is not the same as anti-utopia, which is a theoretical framework that argues that utopia cannot exist, even conceptually. This does not hold true for Le Guin's story, which sees some people leaving Omelas for "somewhere else," a sentence that promises a better place. It also does not hold true for the three texts in this chapter, all of which have their own versions of Ernst Bloch's "Not-Yet" and José Esteban Muñoz's "queer futurity," as I argue in this chapter.

[359] The parentheticals emphasize the larger control of the utopian society dependent on those trapped in the prefix (dys).

[360] Robin Roberts, *Anne McCaffrey: A Life with Dragons* (Jackson: University Press of Mississippi, 2007), 71-72.

The main character of *The Ship Who Sang* is a disabled woman, Helva, whose body is encased in a spaceship. The text positions Helva as disabled in the opening lines of the novel: “She was born a thing and as such would be condemned if she failed to pass the encephalograph test required of all newborn babies.”[361] Here is a government, Central Worlds, that has seized complete control over medical institutions and is concerned intimately with the bodies of its citizens but styles itself as a place-based utopia that cares about the happiness and wellbeing of all its citizens. Helva is positioned as biolabor for Central Worlds: she is a cargo ship, a diplomat, an artist, a scout ship, and an informational processing machine, amongst other roles. Due to the nature of its origins as a series of published stories, the novel functions episodically, with the first story establishing Helva's origins as a shell-person–a human encased inside a metal shell–and the loss of her first partner (a "brawn"), with subsequent chapters recounting adventures while dealing with issues of grief, trauma, sexuality, privilege, ableism, and gaslighting.

The controversy surrounding the novel stems in part from a misreading of the text by Donna Haraway. In her "A Cyborg Manifesto," Haraway briefly references Helva as an example of how people with prosthetics might pose a challenge to organic integrity: "Anne McCaffrey's pre-feminist *The Ship Who Sang* (1969) explored the consciousness of a cyborg, hybrid of girl's brain and complex machinery, formed after the birth of a severely handicapped child. Gender, sexuality, embodiment, skill: all were reconstituted in the story. Why should our bodies end at the skin, or include at best other beings encapsulated by skin?" (25). Kafer criticizes Haraway’s use of this example: "It is useful to note that the one example Haraway gives of such 'severely handicapped people' is not a real person but a fictional character from Anne McCaffrey's *The*

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[361] McCaffrey, *The Ship Who Sang*, 1.

Ship Who Sang: a 'severely handicapped child' who was so physically disabled that her only hope of survival was to have her brain removed from her body and placed inside a machine (the spaceship of the title).”[362] Although Schalk does not mention Haraway's reading of the novel, she echoes Kafer’s criticism by positioning *The Ship Who Sang* in the tradition of speculative "cure" narratives, “all of which represent disabled people significantly enhanced—and essentially erased as visible figures—through technology in the future.”[363] In a blog post “The Future Imperfect,” disability activist Sarah Einstein reacted to reading the first lines of the novel with horror at the thought of a future where “disability is so depersonalizing that the very promising are rewarded with slavery and disembodiment; those who don't pass the test for these rewards are put to death.”[364]

These readings *are* supported by the paratext surrounding the novel. After all, the back cover of the Del Rey collection of these stories includes the rather dramatic description “Helva Had Been Born Human…but only her brain had been saved—saved to be schooled, programmed and implanted in the sleek titanium body of an intergalactic scout ship.”[365] However, this description is inconsistent with the novel, which insists again and again that Helva and the other shell-people are not disembodied brains but are bodyminds whose nervous systems have been connected to a ship as an advanced form of prostheses. It is easy to see how Haraway may have misread the text through the lens of this framing, and it is furthermore understandable why many crip theorists and disabled readers have dismissed the novel as an ableist progressive narrative based on Haraway and these paratextual readings.

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[362] Kafer, Alison. *Feminist, Queer, Crip*, 112.
[363] Schalk, *Bodyminds Reimagined: (Dis)ability, Race, Gender in Black Women’s Speculative Fiction*, chap. 3.
[364] Sarah Einstein, “The Future Imperfect,” *Redstone Science Fiction* (blog), http://redstonesciencefiction.com/2010/05/einstein-essay-june2010/.
[365] McCaffrey, *The Ship Who Sang*, back cover.

These criticisms are based partially on a misreading of what kind of cyborg Helva is: despite the title “Brainship,” the shell-people, as Helva and other disabled people who have been subjected to the surgeries are called in the novel, are not disembodied brains whose disabled bodies have been removed or destroyed. Although the description of Helva and the other shell-children near the beginning does emphasize the brain as an important part of the organic/prosthetic communication, the narrator is careful to describe the surgical and hormonal treatments that allowed the bodies of shell-people to exist within their shells: "Shell-people resembled mature dwarfs in size whatever their natal deformities were," with the paragraph going on to describe surgeries and chemical and hormonal treatments designed to keep the bodies of the shell-people small and undeveloped physically and sexually.[366] Later, when Helva is picking her first brawn, she selects Jennan primarily because he always turns to address her at the central control station where her shell is encased, “regardless of the fact that he knew she could pick up his image wherever he was in the ship and regardless of the fact that her body was behind massive metal walls. Throughout their partnership, Jennan never failed to turn his head in her direction no matter where he was in relation to her.”[367] Later, she notes that the relationship between a shell-person and their prosthetic (ship, city, or otherwise) is not public knowledge: “A brawn was very much aware, if the majority of the Central World's populations were not, that behind the ship's titanium bulkhead reposed a shell, containing an inert--but--completely human body.”[368] There are many other references to "Helva's shell-encased body" throughout the rest of the novel, underscoring the idea that although her intellect and her brain are certainly what is

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[366] McCaffrey, 2. The treatments and surgeries that Helva undergoes, while science fiction, are, in their scope, reminiscent of very real treatments. See the case of Ashley X. Julia Epstein and Stephen A. Rosenbaum, “Revisiting Ashley X: An Essay on Disabled Bodily Integrity, Sexuality, Dignity, and Family Caregiving,” *Touro Law Review* 35, no. 1 (2019): 197-234, https://digitalcommons.tourolaw.edu/lawreview/vol35/iss1/9.

[367] McCaffrey, *The Ship Who Sang*, 11.

[368] McCaffrey, 179.

prized by Central Worlds, her organic, disabled bodymind is what allows her to be connected to the ship. Instead of Helva's brain inhabiting the ship as a body (in a body/mind dichotomy so favored by Cartesian philosophers), the ship rather acts as a prosthetic, rather than a replacement, to Helva's disabled body.

Helva's body also insists on reminding both the Central Words and the reader of its existence. The novel makes a distinction between physical erasure and discursive erasure by engaging with the *process* of how erasure occurs. When Helva is fourteen, her class of shell-children is observed by representatives from the Society for the Preservation of the Rights of Intelligent Minorities, who "got all incensed over shelled 'children.'"[369] As a strategy to defend the program, Central Worlds begins their tour of the facility by disclosing medical case histories for the shell-people: "Very few committees ever looked past the first few photos. Most of their original objections about 'shells' were overridden by the relief that these hideous (to them) bodies were mercifully concealed."[370] The Society for the Preservation of the Rights of Intelligent Minorities might want to preserve the rights of disabled bodyminds, but they certainly do not want to see them.[371] To them, it is better if the disabled bodies are erased from the abled gaze, to hide them from disgust and pity.

While at first this section might appear to endorse this erasure, the parenthetical "(to them)" signals the irony of the incident, a critique of progressive discourses. The novel is documenting the process of erasure of Helva's body, discursively and medically, from the abled gaze, but her body is not erased from the reader or from Helva herself, who often thinks about

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[369] McCaffrey, 3.

[370] McCaffrey, 3.

[371] While McCaffrey's novel clearly predates organizations such as Autism Speaks that seek to cure certain kinds of disability, a reader in the 21st century could easily swap the Society for the Preservation of the Rights of Intelligent Minorities for a non-fantastic organization and the critique would remain.

her own body despite being conditioned not to. Her body, in fact, is what allows Central Worlds to capitalize on her brain, recreating her brain as a “dividual” resource to be controlled. Her body is the unspoken and hidden link between debilitation and commodification. By emphasizing this double-vision of Helva's bodymind, the reader can begin to see the ironic connection: the very institution that claims Helva's value does not see her, creating that circuit between erasure and debilitation.

Helva encounters many ableist narratives throughout the novel, both from friends and enemies. There appear to be two distinct reactions to Helva within the social discourses of the novel. The first is the imperative that her disabled life–which was not worth living and would have been destroyed–is only valuable in the ways in which her body can be controlled by the Central Worlds for its own uses, giving her bodymind meaning within the progressive narrative. The other reaction seems be that even as a Brainship, that Helva’s life is still not worth living, that it is a marker of tragedy and a failure of progress. When Theoda, a temporary brawn in the second chapter/story, and Helva encounter a population of a planet who have contracted a paralyzing disease, Theoda expresses horror at the idea that some of the younger children might be recruited into the shell-program, revealing that, while she might admire the superior abilities of Helva's prosthetics, she believes that life as a shell-person is a tragic one: “‘To be trapped, unable to make even the simplest communication--can you imagine how ghastly that must be? Oh, what am I saying?’ she said, turning in horror toward Helva's presence.”[372] Theoda here is expressing a common reaction to disability as a fate only to be pitied, as something less than an abled life, and the fact that she says as much to Helva directly reveals that, despite the discursive

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[372] McCaffrey, 39-40.

positioning of the shell-people as a vital part of Central Worlds, they are still coded as lesser than an able-bodied person.

Ableist discourse is also tied to sexist discourse in the novel. Teron, another brawn that Helva has for a year in "The Ship Who Dissembled," provides the most notable example. He condescends to and gaslights Helva in order to convince her to rely on his intellect and judgment over her own:

> “I know now why Central World insist on a human pilot as commander of the brain-controlled ships. They are necessary, so necessary when an unreliable organism is nominally in control of so powerful an instrument as this ship…. There will come a day…. when such poor expedients are no longer necessary. Automatic operations will be perfected to such a fine degree, human brains will no longer be needed.”
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> ‘They use *human beings*,’ Helva had replied, pronouncing each syllable distinctly.[373]

Note how Teron also equivocates Helva to her brain; though he is a brawn–and Helva notes that he should know better–she must keep correcting him as to the precise relationship of her bodymind to the ship. She acknowledges to herself that this error is due to ableist prejudice "whether he would ever admit it or not, the very concept of cyborgs like Helva was repugnant to Teron" (179). She finds herself questioning her own judgment throughout the story, a hallmark of emotional abuse, and must remind herself of her own worth several times during this story. Teron's ableism manifests itself as deep distrust of Helva's disabled bodymind and the urge to become her caretaker and master rather than her partner, echoing the ableism that enables many caretakers of people with disabilities to gaslight and abuse them.[374]

Although there are many other examples of ableism, well-meaning and otherwise, in this novel, by the final story, Helva must acknowledge to herself that “very few people she had

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[373] McCaffrey, 178.

[374] The brainship/brawn partnership is also often figured in terms of marriage: Helva refers to the severing of her partnership with Teron as "a divorce.” There is considerable satisfaction in reading the end of this story when Helva sonically drives him from the ship, re-establishing her own autonomy. McCaffrey, 180.

met…thought of her as Helva, a person, a thinking, feeling, rational, intelligent, eminently human being."[375] Instead, as she reflects on her previous interactions with abled characters, her existence as "a human being entombed in a bulkhead connected to the operational circuitry of a powerful space ship" often inspires horror, disgust, or a complete erasure of her body in favor of her brain.[376] Although Helva begins the novel with all the assurances of Central Worlds that she will "live a rewarding, rich and unusual life, a far cry from what she would have faced as an ordinary, 'normal' being," it is easy to see by the final chapter that this propaganda rings false in the face of the less than satisfactory relationships Helva has with her abled partners and acquaintances due to the profound presence of ableism in almost every aspect of the discursive constructions of the shell-people.[377] There is, indeed, an erasure of disabled bodies in *The Ship Who Sang*, but it is by the progressive narratives of "usefulness" propagated by the government and abled citizens of Central Worlds, not by the novel itself.

What McCaffrey's novel does is explore the ironic relationship between utopia and cheerful affect. In *The Ship Who Sang*, the cheerfulness of these characters, a signifier of utopia, is deliberately juxtaposed with darker signaling of dystopia to create that double-vision of *the same* and *otherwise*. Helva is Le Guin's "child in the basement" that allows the Central Worlds to thrive; she exists in a dystopia within the same spatial plain as utopia, a utopia that relies on her very existence. Helva's affect is cheerful and matter-of-fact, but her affect is the result of early childhood brainwashing. Early on in the novel, the narrator describes the education of shell-people to be "balanced properly between optimism and practicality" with a "non-defeatist attitude."[378] The Central Worlds is literally enforcing the affect of cruel optimism on its disabled

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[375] McCaffrey, 200.
[376] McCaffrey, 200.
[377] McCaffrey, 2.
[378] McCaffrey, 6.

citizens by instilling its progressive narratives of participation in their system at a subconscious level.

The novel explores how the Central Worlds uses this conditioning through Kira, a temporary brawn. Kira reveals to Helva that she has attempted suicide in the past but has been subjected to heavy conditioning to avoid it.[379] Kira is highly suspicious of Helva at first because she believes that Helva is either participating in Kira’s conditioning or is monitoring Kira for signs of conditioning failure. Helva assures Kira that neither is true but then gives the reader some insight into why the conditioning occurs: “And they can’t allow you to suicide because the ethos of Central Worlds is dedicated to extending life and propagating it wherever and whenever possible. I’m a living example of the extremes to which they are willing to go to sustain a human life.”[380] The mission of sustaining and saving life is equated with absolute control over the bodyminds of the citizens of Central Worlds. This control is justified through the utopian “ethos” but the unspoken question here is what kind of lives are valued and why are they valued? Central Worlds is clearly not interested in the kind of life Helva may have had as a disabled person at the beginning of the novel. Yet Helva insists in the above passage that she is proof that the “ethos” is real, that Central Worlds has gone “to extremes” to sustain her life.[381] The irony here comes in the affective charge between the two statements: Central Worlds values a certain kind of life, a life they can control through “cure.” Conditioning in this novel, then, signifies the debilitating discourse that forces citizens to participate in the capitalist systems of this (dys)topia as biolabor.

Helva's bodymind as a person/ship is positioned from the very beginning of the text as biocapital for Central Worlds, a biocapital that is controlled by the Central Worlds healthcare

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[379] McCaffrey, 67.
[380] McCaffrey, 67.
[381] McCaffrey, 67.

system. Shell-people are expected to work for Central Worlds in whatever capacity deemed necessary until they pay off “the massive debt of early care, surgical adaptation, and maintenance charges.”[382] Here we can see the feedback loops of the US healthcare system. Central Worlds is a "company store" model: the shell-person must rely on the government for all resources, medical or otherwise, until they have paid off their debt. Furthermore, while they are working for Central Worlds, any damage to the ship received–an occurrence which is common during the dangerous missions the brainships are sent on–is added to the debt, invoking the slow death as the counterpoint to the cruel optimism of conditioning. One must wonder if nondisabled people under the jurisdiction of the Central Worlds must also be indentured in this way for access to healthcare: the brawns certainly do not appear to be.

This feedback loop between the Central Worlds, healthcare, and the brainships blurs the boundaries between national and corporate entities. Central Worlds values Helva as biocapital, which gives them a vested interest in continuing to debilitate her. By using utopian language—“Helva would live a rewarding, rich, and unusual life, a far cry from what she would have faced as an ordinary, 'normal' being”[383]—to describe the value of disabled bodyminds (provided they are not *too* disabled), Central Worlds simultaneously erases and debilitates Helva's body into biolabor that is used for the good of the corporation-state. McCaffrey also stresses that it is very difficult for many brainships to “pay off”–own their own ships and bodies. Thus, despite the promise of eventually paying off the debt for health care, many brain ships remain caught in the circuit.

When Helva does “pay off” by the final chapter, she realizes that although she yearns for companionship from someone who sees her as a human being, anyone qualified to be her partner

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[382] McCaffrey, 10.
[383] McCaffrey, 1.

would have gone through conditioning by Central Worlds, which she has begun to distrust. She is free to choose, but her choices are limited. While she contemplates this dilemma, another shell-person, Silvia, recommends that she get legal representation from some activist groups for minorities and then tells her to contact another shell-person to ask about other employment options.[384] This advice suggests that the shell-people have formed both formal and informal networks designed to resist the debilitation by Central Worlds. Faced with the possible threat of forced service, Helva realizes the extent of control Central Worlds has over shell-people:

> Now Helva could see that the subtle, massive conditioning she'd received in her formative years was double-edged. It made her happy as a shell-person, it had dedicated her to her life in Service, and it made her Pay-off a mockery. What else could a BB ship do but continue as she had started…in Service? The same must apply to other shell-people trained to manage ships, mining planets or industrial complexes.[385]

The conditioning gave Helva the cruel optimism in her role as biolabor obscured the inability for Helva or any of the other shell-people to opt out of the system. The last sentence especially highlights the irony: Central Worlds contends that the compensation the shell-people receive prevents them from becoming slaves, but ultimately, what does that compensation mean if the shell-people must give it back to Central Worlds in the end? This provides a potential answer to the second question I asked at the end of the last interchapter: what can these narratives tell us about the intimate ties between bodyminds, biolabor, and healthcare? Despite the negotiating power that Silvia promises Helva that she has, the fact remains that Helva must still engage in the same labor–labor that is intimately tied to her bodymind and her health–in order to access the resources she needs, especially healthcare. In doing so, she must agree to slow death in exchange for the ability to participate in the feedback loop.

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[384] McCaffrey, 203.

[385] McCaffrey, 205.

The Brain in the Bot: *Autonomous* (2017)

In 2017, Annalee Newitz gave an interview about her science fiction novel *Autonomous* (2017) in which they offered this now prescient comment on the dangers of the current pharmaceutical system in the US:

> We're going to have scenarios where more and more pandemics start in developing countries where people can't afford vaccines or therapies, and whether we help them will come down to a few business decisions. Currently, there's a legal loophole that allows countries to manufacture a patented drug if there's a pandemic. But that's just one tiny concession. I strongly believe that healthcare and access to medicine should be a right, that it shouldn't be something we have to pay exorbitantly for. Unfortunately, that's exactly the opposite attitude of the pharmaceutical industry.[386]

Newitz explores this idea of healthcare as a capitalist system and the pitfalls of viewing health care as a privilege rather than a right in *Autonomous*. The novel is set in 2144. Healthcare has become inextricably tied with class, as pharmaceutical companies develop medication to cure any ailment and to supplement and regulate every part of human life, as long as one can pay for it. For those who can't, there is a booming drug piracy trade in which chemists reverse engineer brand name drugs, despite the strict patency laws that police such infringements. Jack, an anti-patent scientist turned pirate, travels the world in her own submarine, ferrying pirated pharmaceuticals to those who need them. However, when people start dying from lethal overdoses of workplace mood enhancement drug Zacuity that she reverse-engineered—literally making people addicted to working—she must uncover a conspiracy by the pharmaceutical company holding the patent to the drug.

There are two intersecting threads of *Autonomous*. The first is Jack's mission to expose the pharmaceutical company Zaxy as creating an addictive drug and to engineer an antidote. The

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[386] Annalee Newitz, interview by Amy Brady, "In 'Autonomous,' Climate Change is a Disease Vector," *Chicago Review of Books*, September 28, 2017, https://chireviewofbooks.com/2017/09/28/autonomous-annalee-newitz-interview/.

second is the two IPC agents who are on her trail: one a human law enforcement operative set on protecting patent law at all costs and the other his newly made military robot partner. These two storylines, when placed side by side as they are, reveal a (dys)topia in which the rich live long, healthy, and happy lives at the expense of the poor and nonhuman. Set side by side, *The Ship Who Sang* and *Autonomous* both explore the circuitry of cruel optimism and debilitation through medical indentureship and exploitation. Unlike *The Ship Who Sang*, however, Newitz's novel digs deeper into the mechanics of how attachment to capitalist fantasies enable healthcare corporations to commodify every part of human existence, blurring the boundaries between the bodymind and labor. Both main characters of the novel–Jack and Paladin–illustrate the cruel optimism of promised autonomy within a system where autonomy is impossible.

Jack's storyline follows her mission to expose Zaxy and their product Zacuity as dangerous. Zacuity is a literal manifestation of Marx's "opiate." Instead of religion, Zacuity's purpose is to mask the slow death of capitalism by connecting work with the reward centers of the human brain, much like Paladin's programming connects loyalty and affection to Eliaz and the IPC.[387] Zacuity works to reprogram humans for optimized efficiency: if work actively makes someone happy, why would they not want to spend all their time, energy, and focus at work? Zacuity creates the human as a dividual, valued for whatever bodily qualities allow them to best engage in their employment. Thus, the drug highlights the intimate ties between bodyminds, healthcare, and labor: in order to work, one must optimize one's body through medication.

The problem is that the drug works too well. A student studies until she dies from starvation. A man working for a health insurance company processes claims until he dies from dehydration. Slow death is sped up: Zacuity literally makes people work their bodies to death.

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[387] Annalee Newitz, *Autonomous* (New York: Tor, 2017), 115.

Jack notes that this type of error is unusual but not unexpected for the big pharma corporations who control almost every aspect of human life and who prioritize profits over safety. She also notes that a medication like Zacuity–in a world like the novel where everything is medicalized–is "a necessity. When you're competing for jobs with the people who take it, Zacuity could mean the difference between employment and unemployment."[388] When a person's value as biocapital depends on individual characteristics like health, efficiency, and ability, any medication or treatment that makes that person better as a worker becomes part of the cost of participating in the marketplace. Value depends on debilitation, the willingness to become a dividual and commit oneself to slow death.

The corporations also actively discourage pirating the drugs, something that Jack does as a way to help poor people access the medication that they need. A representative of the state in the book, Senator Halderman, argues that this kind of piracy is a threat to capitalism directly: "Piracy undermines free trade, and punishes the most productive members of our society."[389] This rhetoric echoes that of Mulvaney from the HEALTHCARE interchapter: the idea that poor, sick, and/or disabled members of society are a drain on more "productive" members.

The medication is not the only storyline featuring debilitation. The indentureship of bots is directly connected with the advent of human indentureships in the novel. The logic was that if you can indenture sentient beings like bots, you can indenture humans as well, supplying the market for biocapital directly. Humans can sell themselves legally for a set amount of time, but they can also often sell their children, despite it being technically illegal. At the beginning of the novel, Jack rescues an indentured human from a pirate that tried to steal from her, saving his life. Threezed—so called because of his tattooed auction number ending in 3-0—eventually cultivates

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[388] Newitz, 90.
[389] Newitz, 122.

a relationship with Jack, but it is clear that he wants to remain attached to Jack because of the relative security that she provides him as an escaped indentured human. Threezed has been indentured since he was a child, performing sexual and domestic labor unpaid with no legal recourse to free himself. Even those who are not indentured but are still impoverished are subject to debilitation, just not perhaps as directly as the indentured humans and bots. Jack notes this when Krish argues that the patent system often causes poverty and indentureship:

> Only people with money could benefit from new medicine. Therefore, only the haves could remain physically healthy, while the have-nots couldn't keep their minds sharp enough to work the good jobs, and didn't generally live beyond a hundred. Plus, the cycle was passed down unfairly through families. The people who couldn't afford patented meds were likely to have sickly, short-lived children who became indentured and never got out.[390]

It is important to note here that Newitz is white and that, like McCaffrey, she does not necessarily take race as a factor in this novel (Jack is Asian, but this is not explored in any real way in the novel). But this description could easily apply to the ways in which communities of color, especially Black communities, in the US have been debilitated by the US healthcare system.

On the other hand, Paladin's storyline explores the ways in which cruel optimism might drive the creation of new bodyminds to commodify. Paladin might be the closest parallel to Helva in *Autonomous*: she[391] is a military bot with a human brain—harvested from a dead indentured IPC soldier—within her body. However, unlike Helva, Paladin is not a human. She insists many times that the brain works mainly as a piece of their hardware optimized for facial

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[390] Newitz, 55.

[391] For the first part of the novel, Paladin goes by he/him pronouns, but later, due to her romantic relationship with her handler Elias, Paladin begins using she/her pronouns. However, it is difficult to know if this character is trans as Paladin notes that pronouns and gender do not mean much to the bots.

recognition and visual processing. Paladin is a cyborg, but instead of a human with technological prosthetics, she is a robot with a human prosthetic.

Like Helva, Paladin is indentured to the IPC in order to cover the cost of her construction. Bots, like humans, are considered sentient beings by the government, and as such, can legally be only indentured for ten years, however, many entities find ways to prolong the indenture period through various maintenance charges in ways similar to the feedback loops between the Central Worlds and the shell people. In fact, autonomous[392] robots are so rare that most humans in the novel just assume that a bot is indentured. This happens to both Med, a rare bot character who was raised autonomous, and to Paladin, who masquerades as autonomous as part of the mission to catch Jack, at various points in the novel. When Lee, the bot technician for IPC, gives Paladin the temporary autonomy key for her mission, she realizes that his ineptitude at installation is because “He’d never installed autonomy keys because none of the bots at this base had gone autonomous during all the years he’d been here.”[393] When considered together, Paladin’s storyline and Threezed’s storyline create a window into the often subtle and insidious boundaries that capitalist systems create in order to maintain various levels of debilitation.

However, even as Paladin says that the promise of autonomy feels like hope,[394] over the course of the novel, we as readers begin to realize that promise might not be as fulfilling as once thought. During Paladin’s search for Jack, she meets two other bots, Bug and Actin, who are arguing about the worth of autonomy. Actin wants to earn his autonomy, even as Bug says that he should take it from the humans.

“Is that what you really want or is that your programming?” Bug challenged.

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[392] Bots that are not indentured

[393] Newitz, 218

[394] Newitz, 35.

> Actin sent a series of rude emojis. “It’s what I want. It’s my programming. I can’t possibly know, and it’s a completely uninteresting question to me. I don’t even believe in consciousness. When I’ve got my autonomy, I’ll still be programmed, and I’ll still need a job researching brain interfaces.”
>
> “Don’t you want to be free?”
>
> “Free to work selling mementos of a meaningless and unenforceable set of laws to the drones on No. 3 Road?”

Actin has recognized, unlike Paladin and Bug, that being autonomous is not being free as he will still have to participate in the capitalist marketplace. Much like Helva, he realizes that the goal of paying off his indentured status will not guarantee him freedom, dispersing the cruel optimism that the promise of autonomy–if he just works hard enough–offers.

Ultimately, Paladin does not make the same realization as Actin. After a violent encounter with Jack, Paladin loses her human brain and her ability to recognize human facial expressions, essentially becoming permanently disabled. Lee tells her that this kind of injury is expected: “no one expects those brains to last very long.”[395] This, is, in fact, what the purpose of the bots is, according to the IPC, a workforce that is made available for debilitation as part of their indentureship. Despite all this, Paladin still submits to the roles that other humans have placed on her. She has no choice. Elias, Paladin’s lover and handler, buys out Paladin’s indentureship so they can be together, giving her autonomy. Paladin decides to go with him to a Mars colony in order to participate in a heteronormative capitalist fantasy. She specifically ties human acceptance of their relationship to the kind of work she can do: “It wouldn’t matter as much on Mars, where the labor shortage meant that all were welcome, especially a bot who could work outside the atmosphere domes.”[396] Despite everything she has learned about

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[395] Newitz, 295.
[396] Newitz, 300.

autonomy, indentureship, and commodification, she still must still seek out employment tied to her bodymind–rendering her available for biolabor–in order to survive.

The Mutants in the Prison: *Age of X-Man: Prisoner X* (2019)

To conclude this chapter, I want to turn to a final text that explores the affective charge within (dys)topia in order to think about the ways in which the cruel optimism of progressive narratives might be resisted. Despite the queer utopian impulses of both McCaffrey and Newitz's novels, neither one of them engage in an actual conversation about resistance to such as (dys)topia, focusing instead on survival. How does one resist cruel optimism when it is packaged as utopian thinking?

In 2019, Marvel released a group of six five issue miniseries bookended by two one-shots in an event called *Age of X-man*. The title invokes another class X-men miniseries–*Age of Apocalypse*–but instead of being set in a brutal overt dystopia created by a super villain obsessed with eugenics, this series focuses on different aspects of living in a utopia in which Professor X's ideals are realized and all people live together in harmony. Creators Zac Thompson and Lonnie Nadler describe the premise of the series as utopian: "It's 'What do we do after we've won?' What is the X-men's purpose when they're all united and they've beat hate?"[397]

The alternate universe of *Age of X-man* was created by Nate Grey, aka X-man, with his enormous psychic powers in order to realize his dreams of mutants being respected and safe. The prologue text in all of the issues reads:

> Welcome to a perfect world.
> Everyone is a mutant–special, powerful, individual.
> No more strife, oppression, or dependence.
> The Age of X-man: a dream made real.

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[397] Zac Thompson and Lonnie Nadler, "AGE OF XMAN FAQ," By Zac Thompson, Youtube, January 24, 2019, Video, 4:59, https://www.youtube.com/watch?v=1vzNdXB6DYU&t=289s.

A dream that must be protected…at any cost.

All people in this utopia are mutants, and most people enjoy happy and fulfilling lives. There are no mobs hunting mutants, no attempts to "vaccinate" children out of the X-gene, or laws being passed requiring mutants to register, or high premiums for mutant healthcare. Grey populated this universe by throwing the current X-men line-up into it, and most of them do not remember who they are or that they have been transported into this universe.

Like the bots of *Autonomous*, the cruel optimism of Nate Grey's utopia relies on the promise of complete self-fulfillment through using one's bodymind–through mastery of mutant power–to live as a productive member of society.[398] People find their purpose in this society through their work and through their participation in the utopia: everyone has a place, a role to fill. Romantic love or close friendships outside of work are forbidden because these types of attachments foster undesirable emotions and behaviors, according to Nate Grey.

Each of the miniseries follows a group of characters that we know from the X-men universe as they begin to question this world that they find themselves in, and it quickly becomes apparent that this pocket universe is a (dys)topia, relying on a progressive narrative that elides the debilitation of some of its citizens. While some X-men characters such as Psylocke, Nightcrawler, and Colossus find themselves in positions of relative power and prosperity in the new world order, some find themselves incarcerated in the Danger Room Prison Complex. These mutants—Bishop, Beast, Dani Moonstar, Gabby, and Polaris—are the center of the *Age of X-men: Prisoner X* miniseries written by Vita Ayala and artwork by Germán Peralta and Matt Horak. The miniseries explores what incarceration looks like in this kind of society and the price some are asked to pay for the utopia of others.

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[398] Zac Thompson, Lonnie Nadler, and Simone Buonfantino, *Age of X-man: Omega* (New York: Marvel, 2019), Kindle Edition.

Sentenced to the Danger Room Prison for possession of guns, "conspiracy to disseminate anti-autonomy misinformation" and having a romantic relationship,[399] Lucas Bishop is told that his sentence is for the purposes of rehabilitation, "to learn your place in things."[400] All of the mutants at the facility are "unfit" members of society who are, ostensibly, there to learn how to be a "productive member of society."[401] They are depowered through the use of collars, effectively taking away both their freedom of movement and their bodily autonomy. Some of them like Bishop have committed specific crimes that threaten the status quo, but others have no memory of a life in Grey's utopia before coming to the prison. Dani Moonstar, for instance, does not know why she is in the Danger Room, implying that she has been in the prison since Nate Grey created this pocket utopia. However, because of her psychic abilities, she is able to remember bits and pieces of life on Earth-616,[402] and she knows that they are being psychically gaslit into believing that this utopia is where they belong. Her knowledge and her power are dangerous to Nate Grey's society because she can recognize the truth, so she is depowered and locked away. It is also worth noting that most of the mutant characters considered "dangerous" are Black (Bishop), Indigenous (Dani), Jewish (Polaris), or have an obvious physical mutation or facial disfigurement (Beast and Gabby), tying debilitation to certain minority populations.

Bishop also remembers bits and pieces of his other life: "Whatever I was seeing was off somehow. Misaligned. Ill-fitting, even."[403] Eventually, Bishop recognizes that this universe is only a utopia–or as he says, "a fauxtopia"– from the point of view of those who fit within the

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[399] It is interesting that while both Bishop and Jean Grey are portrayed as in a consensual relationship that Bishop, a Black man, is incarcerated and Jean Grey is allowed to stay free, although her memories are wiped.

[400] Ayala, Peralta, and Horak.

[401] Ayala, Peralta, and Horak.

[402] In the Marvel multiverse, the main storylines all happen on Earth-616 or prime Earth. The others are considered alternate universes.

[403] Ayala, Peralta, and Horak.

system. Those who "misfit," as Garland-Thompson would say, are erased from the utopia through this carceral system.[404] Bishop counters Nate Grey's assertion that this world is "a dream" by calling it a "sterilized fantasy," a fantasy maintained by the active debilitation of those whose differences exclude them from the utopia. It is the attachment to "the dream" that is the cruel optimism for many of the people who live there because it promises peace and equality but only if those same people look and behave in certain ways. Otherwise, they will end up in the Danger Room Prison.

By the final issue, the prisoners are only able to put together the pieces and mount a resistance by forming a community of their own. When they discover that Nate Grey has employed Legion to keep them imprisoned via telepathic gaslighting–another form of control–they team up to fight him and free themselves. When Legion is defeated, he asks Dani, "You don't have it so bad here, do you? Three hots and a cot? You've got more freedom here than anyone else in this world. Don't throw that away!" Dani responds, after punching him, "Of course, you would think this is freedom. I did nothing to deserve this place–none of us have. Not really. I'm done suffering in this place so that other people can go through the motions of living out their empty lives."[405]

It is in Dani's response that we can begin to answer the final question from the interchapter, to find ways to resist debilitation. Dani values herself and her friends enough to dispute the progressive narrative that they must be imprisoned "for the good of the many." She understands that even if she were to eventually be able to mask who she is and to join the larger community of the utopia Nate Grey has created, she would be participating in a system that does not love her back, that encourages its residents to live "empty lives"–lives imbued with cruel

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[404] Garland-Thompson, "Misfits: A Feminist Materialist Disability Concept," 594.
[405] Ayala, Peralta, and Horak.

optimism–at the expense of others.[406] By saying that she is worth more, that her friends are worth more, Dani begins to break the circuit introduced in “The Ones Who Walked Away from Omelas.” She no longer is content to be the child in the basement.

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[406] Another science fiction text that questions why some people should be sacrificed for the greater good is the 2016 zombie film *The Girl with All the Gifts*. See Schalk’s analysis of this film. Schalk, *Bodyminds Reimagined: (Dis)ability, Race, Gender in Black Women’s Speculative Fiction*, introduction.

Interchapter: GENOME

CW: eugenics, race science, medical racism/sexism/ableism

"If we wish humankind to achieve its potential (which has so far almost universally been assumed to be an inevitable part of evolutionary progress), this might require some deliberate changes."[407]

"Eugenics has no political party. It's as comfortable with the straw bans on the left as the removal of healthcare for those with pre-existing conditions on the right."[408]

When discussing progressive narratives and utopia, we cannot neglect the twin discourses of genetics and eugenics, deeply intertwined by history. One would be hard pressed to find a medical field more full of progressive narratives than the field of genetics, which often emphasizes the advancement of the field to the curing of disability and disease, the creation of new food sources, and even–in some cases–the enhancement of the human species. However, the field itself has historically and philosophically shaped–and is shaped–eugenics in the pursuit of those utopian goals, leading to the debilitation and intentional disabling of thousands in the name of scientific research.

As mentioned in the Introduction, eugenics has been present in the field of genetics almost since the beginning of the field itself. In 1905, William Bateson, who rediscovered and popularized Mendel's work and coined the term *genetics*, warned of the implications of the field: "One thing is certain: mankind will begin to interfere."[409] While the idea of breeding humans for "desirable traits" goes back as far as Plato's socially stratified *Republic,* it was the development of the field of biological hereditary, natural selection, and variation by Charles Darwin, Gregor

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[407] John Harris, *Enhancing Evolution: The Ethical Case for Making Better People* (Princeton University Press, 2007), 11.

[408] Imani Barbarin (@Imani_Barbarin), "Eugenics has no political party…," Twitter, June 18, 2019, https://twitter.com/Imani_Barbarin/status/1141148441961291776?t=y-nTjXvgiXGrLGQL3I4glQ&s=09.

[409] William Bateson, "Heredity in the physiology of nations," *The Speaker*, October 14, 1905.

Mendel, and other natural biologists in the mid-19th century that allowed their immediate respondents toe implications of such a science on a social and political scale.[410] Francis Galton, a cousin of Darwin's who coined the term *eugenics* in 1883, was one of the first proponents of such a manipulation of genetics.

Galton, at first, promoted only the idea of encouraging selective breeding of families or individuals who demonstrated these qualities or who had children who had surpassed them socially.[411] He believed that by making eugenics public policy–a "new religion"–and by using marriage as an institution to promote certain pairings and discourage "unsuitable" ones, humans could be improved. The end of his paper on eugenics, presented to the Sociological Society in London University in 1904, espouses a progressive view of the future based on such methods: "What Nature does blindly, slowly, and ruthlessly, man may do providently, quickly, and kindly. As it lies within his power, so it becomes his duty to work in that direction ....The improvement of our stock seems to me one of the highest objects that we can reasonably attempt."[412] Although Galton warned against haste and utopian thinking in regards to eugenics in that particular paper, he would later go on to write a utopian novel based on his theories called *Kantsaywhere*, in which individuals are encouraged to find partners based on breeding potential.[413]

It quickly became obvious to both him and other eugenicists that the elimination or sterilization of the "unsuitable" or inferior elements of society would also be necessary in order to achieve this future. In the US, this idea of progressive breeding via the elimination of the unsuitable quickly gained popularity in the late 19th and early 20th century. Charles Davenport,

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[410] Callum MacKellar and Christopher Bechtel, *The Ethics of the New Eugenics* (New York: Berghahn Books, 2014), 15.

[411] Francis Galton, "Eugenics: Its Definition, Scope, and Aims," *Sociological Papers* 1 (1905): 50, https://galton.org/eugenicist.html.

[412] Galton, 50.

[413] Siddhartha Mukherjee, *The Gene: An Intimate History* (New York: Scribner, 2016), pt. 1.

a biologist from the University of Chicago, was one of the driving forces of bringing the eugenics movement into US politics and public health discourses. He emphasized the connection between Galton's ideas and Mendel's discovery of genes and claimed that the irreducibility of genes as markers of inheritable traits: "The idea of a 'melting pot' belongs to a pre-Mendelian age. Now we recognize that characters are inherited as units and do not readily break up."[414] For Davenport, genetics offered an opportunity to study and eliminate those attributes that he saw as a threat to the US in order to produce a better society, using his platform to push through legal and public health initiatives to that effect. For Davenport, genetic advancement could not be achieved merely through encouraging the right people to have children, but through the active erasure of certain populations from the gene pool. In this way, he developed and propagated his own progressive narrative about the future, one that did not include specific types of people.

Most people, when they hear the word *eugenics* think of forced sterilization or the death camps of the Nazis in the 1940s, the debilitation and death end of the circuit. They do not think of the optimism of Galton and Davenport: the ways in which they relied on reproduction, albeit controlled and forced reproduction, as part of a progressive narrative about a future, a future that they often painted in glowing terms. This interchapter will explore how eugenics has historically been tied to current genetic science research and knowledge bases as well as how new genetic technologies are importing eugenic ideas through progressive narratives about curing disability and disease.

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[414] Charles Davenport, quoted in Anna Stubblefield, "'Beyond the Pale': Tainted Whiteness, Cognitive Disability, and Eugenic Sterilization," *Hypatia* 22, no. 2 (2007): 164.

An interdisciplinary philosophy: a basic definition of eugenics[415]

The word *eugenics* comes from the Greek prefix *eu-*, meaning "good,"[416] and the word *genesis*, "to create or produce." Although eugenics does tie itself closely with the idea of genetics (through both its name and its close proximity to the science of heredity as formed by Darwin and Mendel), it also draws on psychological, behavioral, and social sciences, which were also developing around the same time: "there was never a time when eugenics was simply an idea, or simply pure science that later came to be applied, institutionalized, and disciplined."[417] Scholars of the early eugenics movements like Wilson argue that such movements often relied on an utopian hope in the future of these fields to improve human society.[418] The very foundation of eugenics is a progressive narrative relying on a future where certain traits are valued and others devalued.

The field of genetics, however, lends eugenics the credibility of its diagnostic gaze, its appeal to objectivity. Because genetics, as it was understood when Galton and Davenport and other early twentieth century eugenicists were writing, posits that genes contain pieces of information that can be passed on from ancestor to descendant, the natural next step, eugenicists argued, was to track and manipulate whose genes were passed on and whose were not. Scholars like Amanda Reyes have linked the field of eugenics to visuality from Galton onward, citing Galton's use of photography to document his research of the physiological appearances of different races and ethnicities in order to determine which should be encouraged to reproduce and which should not: "A *eugenic visuality* [emphasis in original], therefore, is the system of

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[415] Due to the constraints of this project, this interchapter is not a complete or exhaustive history of eugenics. For more detail, see Robert A. Wilson's *The Eugenic Mind Project*, Siddhartha Mukherjee's *The Gene: An Intimate History*, and the #EugenicsSyllabus compiled by Aimi Hamraie and Jay Dolmage.

[416] The same prefix used in the word *utopia*.

[417] Robert A. Wilson, *The Eugenic Mind* (Cambridge, MIT Press, 2017), 27-29.

[418] Wilson, 27.

relations that organizes and authorizes eugenics as a field of study creating methods of research, identification, and classification and as practices of institutional, state, and non-governmental population management.”[419] For eugenicists like Galton and Davenport, the diagnostic gaze allows for a eugenic understanding of the world because it seeks to recognize disorder and reimpose order, drawing on the scientific appeal to objectivity as its way of knowing and seeing all.

Eugenics also draws on the idea that humans and human breeding is no different from that of animals or plants. Both Mendel and Darwin, often considered the forerunners of the genetic sciences, based much of their observations on gardening and animal husbandry, but it was Galton who first made the leap to applying these principles to human heredity. By its very nature, eugenics relies on the diagnostic gaze to determine which traits are “desirable” and which are “more undesirable,” leading to the conclusion that people can be sorted into two categories: “The Fit” and “the Unfit.”[420][421] This alliance with biology as a hard science, combined with the social driven fields of psychology and sciences, allows eugenics its claim to objectivity, even as its methodology has been disproven and disregarded time and again.

The qualities or traits that eugenicists believed could be passed from family to family have varied very little over the first half of the twentieth century. Galton argued that good qualities included “health, energy, ability, manliness and courteous disposition.”[422] Wilson claims these qualities can be sorted into five diagnostic categories:

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[419] Amanda Reyes, “Eugenic Visuality: Racist Epistemologies from Galton to *The Bell-Curve*,” *American Studies* 64, no. 2 (2019): 217.
[420] Wilson, *The Eugenic Mind*, 31-32.
[421] As G.K. Chesterton has pointed out, the language of eugenics is often euphemistic. “The Fit” and “the Unfit” as designations–or diagnoses–leave out exactly what these individuals or groups are fit or unfit for: life, survival, and/or reproduction. G.K Chesterton, *Eugenics and Other Evils* (Portland: The Floating Press, 2015), 13.
[422] Galton, “Eugenics: Its Definition, Scope, and Aims,” 46.

> physical traits (stature, weight, eye and hair color, deformities); physiological traits (biochemical deficiencies, color blindness, diabetes); mental traits (intelligence, feeble-mindedness, insanity, manic depression); posited personality traits (liveliness, moribundity, lack of foresight, rebelliousness, irritability, missile-throwing, popularity); and social traits (criminality, inherited scholarship, alcoholism, patriotism).[423]

This list emphasizes the ambiguity of eugenics as a field. While physical and physiological traits might fall under the purview of biology and medical sciences, mental, personality, and social traits fall under sociology, psychology, and even religious fields. Eugenics relies on positive or negative values being attached to all of these traits,[424] creating yet another diagnostic strategy to read and classify bodies. It is a highly adaptable concept: "Eugenics used whatever was at hand to advance its legislative and social goals."[425] Galton himself was a mathematician, fascinated by the application of statistics to the concept of heredity.[426] He was fascinated with the idea of mental capacity or intelligence as a heritable trait and believed that such qualities could be measured, using criteria such as reaction time to sensory motor tests.[427] While subsequent scientists dismissed Galton's methods as too simplistic, psychologists Alfred Binet and Théodore Simon continued their work along the basic idea, that intelligence was a trait that was measurable. Together, they developed the Binet-Simon intelligence scale to measure the intelligence and progress of children in Parisian schools.[428]

However, when the test was brought to the US by Henry Hebert Goddard in 1910, it re-acquired Galtonian eugenic principles.[429] Goddard deployed his tests on US Army recruits[430] as

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[423] Wilson, *The Eugenic Mind*, 58.

[424] Wilson notes that even the term *traits* is a highly subjective and ambiguous term. Wilson, 31.

[425] Nancy Ordover, *American Eugenics: Race, Queer Anatomy, and the Science of Nationalism* (University of Minnesota Press, 2003), xvii.

[426] Wilson, *The Eugenic Mind*, 31.

[427] Richard B. Fletcher, and John Hattie, *Intelligence and Intelligence Testing* (Florence: Taylor & Francis Group, 2011), 16 and 17.

[428] Fletcher and Hattie, 17-18.

[429] Fletcher and Hattie, 19-20.

[430] Fletcher and Hattie, 22.

well as immigrants on Ellis Island.[431] Goddard's tests lead to legislation like the 1924 Johnson-Reed Act, which prohibited immigration from certain countries or areas that were thought to produce people who were "feeble-minded, particularly Asian countries.[432] Controlling immigration was one way to ensure erasure of certain traits from the gene pool, eliminating disabled people and non-white people as candidates for citizenship.[433] In this way, eugenics is fueled by ableism, nationalism, and white supremacy. It is a mechanism of keeping a nation homogenous or of only allowing people likely (based on their genes) to support the national interests to enter/reproduce.[434] These philosophies are still enshrined in US immigration policies and practices. Although eugenics may have had its roots in England, the US has clearly adapted it and enshrined it in many of its institutions, from immigration law to medical practices.

Forced Sterilizations: A US Institution

Some results of eugenics, such as the social and legal taboos against incestuous partnerships, may seem benign,[435] but the eugenics strategy towards progress has had devastating consequences for many minority populations in the US. One of the first and primary targets of eugenics movements–often with little pushback from the public–was the disabled population.[436] As noted earlier, many of the negative qualities of "the Unfit" that eugenics advocates sought to eliminate were directly tied to disability, both physical and mental: blindness, "feeble-mindedness," insanity, cognitive disorders, developmental disorders, physiological defects, etc.

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[431] Anna Stubblefield, "'Beyond the Pale': Tainted Whiteness, Cognitive Disability, and Eugenic Sterilization," 165.

[432] Stubblefield, 165.

[433] MacKellar and Bechtel, *The Ethics of the New Eugenics*, 38.

[434] Ordover, *American Eugenics: Race, Queer Anatomy, and the Science of Nationalism*, xv.

[435] MacKellar and Bechtel, *The Ethics of the New Eugenics*, 40.

[436] Wilson, *The Eugenic Mind*, 83.

For many eugenicists, the mere existence of disabled people was a threat to the future of the US as a nation. Martin Barr, for instance, wrote in 1920 that the population of the US was being "poisoned": "Then these hereditary irresponsibles—degenerates, imbeciles, defective delinquents and epileptics—the very nightmare of the human race, ever with sexual impulses exaggerated, find their "chance" in reproduction. Unconsciously innocent prisoners of a normal race, they are nevertheless its worst enemy."[437] Thirty-two US states have had forced sterilization laws on the books based on eugenics principles,[438] and there are records of almost 70,000 people, many of whom were disabled, poor, institutionalized, and people of color, being involuntarily sterilized across the US in the 20th century.[439] These sterilizations often were forced through institutions designed for disabled people, particularly asylums and homes for the developmentally disabled; for some states such as North Carolina, Indiana, California, Alabama, and Georgia, being institutionalized could in and of itself be grounds for sterilization.[440]

Margaret Sanger is infamously involved in this push to sterilize "the Unfit." Although she is best known and praised by liberals as an advocate for birth control and reproductive health, many are unaware or are silent on her eugenic philosophies. She saw birth control, both voluntary and involuntary, as a method to "limit and discourage the overfertility of the mentally and physically defective."[441] While she encouraged reversible contraceptive aids for "strong, healthy people," she advised sterilization and segregation–read institutionalization–for the disabled, especially those who were considered "morons" or "feeble-minded.[442] Sanger's ideas

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[437] Martin Barr, quoted in Wilson, 85.
[438] Wilson, 63-64.
[439] National Women's Law Center, *Forced Sterilization of Disabled People in the United States* (Washington DC: National Women's Law Center, 2022): 18, https://nwlc.org/wp-content/uploads/2022/01/%C6%92.NWLC_SterilizationReport_2021.pdf.
[440] Wilson, *The Eugenic Mind*, 69-70.
[441] Ordover, *American Eugenics: Race, Queer Anatomy, and the Science of Nationalism*, 135.
[442] Ordover, 199.

strongly emphasize disability “a terrible unending tragedy,”[443] but for her, it appears that the tragedy is for nondisabled people who have to support the disabled, rather than for the disabled themselves.

Possibly the most famous and influential case involving sterilization is the Supreme Court ruling on Buck v. Bell. Carrie Buck, a seventeen-year-old white woman in Virginia, became pregnant after being raped by her foster mother’s nephew. The family, embarrassed, committed her involuntarily to the Virginia State Colony for Epileptics and Feeble-Minded. The head of the institution, Dr. Albert Priddy, saw this as a perfect opportunity to test Virginia’s new sterilization laws. He claimed in court that Buck, Buck’s newborn child, and Buck’s mother were “feeble-minded,”[444] a common eugenics catchphrase. Buck v Bell became the first sterilization law to be adjudicated by the Supreme Court. The Court found in an 8-1 decision that the state had the right to sterilize Buck and anyone who “was the probable parent of socially inadequate offspring.”[445] The decision is only three pages long, with Justice Oliver Wendall Holmes famously claiming: “three generations of imbeciles are enough.”[446] Buck v. Bell has never been overturned in the US. Thirty-one of those states mentioned above–and Washington DC–still have forced sterilization laws on the books, and only one US state–North Carolina–has laws explicitly banning forced sterilization.[447] Although these laws are not used today in the same way they once were, forced sterilizations, especially of disabled people under the control of conservatorships or guardians, continues.

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[443] Kafer, *Feminist, Queer, Crip*, 2.

[444] There is some dispute among scholars on whether Buck was in fact disabled or not. Some argue that the “feeble-minded” diagnosis was merely an excuse for her guardians to institutionalize her.

[445] Ordover, 135.

[446] Oliver Wendall Holmes, quoted in Daniel Frost, “Protection against Eugenics: A comparison of two Jurisprudences,” *Journal of Supreme Court History* 42, no. 3 (2017): 275-94.

[447] National Women’s Law Center, *Forced Sterilization of Disabled People in the United States*, 22.

Race Science and Ablenoir

From the very beginning of eugenics, we can see the effects of racism and ableism. Galton himself was incredibility afraid and disdainful of non-white races and believed eugenics was a way to preserve white races.[448] Eugenics is, thus, a direct parent of race science. The premise of race science–that non-white people are biologically and physiologically inferior to white people–both relies on and contributes to the stigma of disability.[449] The two concepts are intertwined in another horrific feedback loop that many Black disability activists refer to as *ablenoir*, a term that emphasizes the specific racist and ableist experiences of many Black disabled people.[450]

Harriet A. Washington argues that modern understanding of the word *race* to categorize (or diagnose) certain groups of people along the lines of physical characteristics such as skin color developed in the 19th century alongside the genetic sciences and the field of anthropology: "not coincidentally, this period coincided with the growth of the slave trade, when the biological distinctiveness of men became economically important."[451] Washington and many other US medical history scholars have carefully documented the numerous ways US medical practitioners theorized the inferiority of Blacks based on their differences from whites as a way to justify slavery, especially as it concerned mental, physiological, and social traits. Samuel George Morton measured the skulls of non-white races to supposedly demonstrate their mental

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[448] Galton, "Eugenics: Its Definition, Scope, and Aims," 48.

[449] Dolmage, *Disability Rhetoric*, 20.

[450] Just as the term *misogynoir* emphasizes the interconnected experiences of racism and sexism that many Black women face.

[451] Harriet A. Washington, *Medical Apartheid: The Dark History of Medical Experimentation on Black Americans from Colonial Times to the Present* (New York: Anchor Books, 2008), 33.

inferiority to whites. Mental defects and moral arguments, especially, formed the basis of this justification.[452]

These racist conceptions of Black inferiority are embedded in the very origins of eugenics: Galton and race taintedness. If white people and their culture are the epitome of "civilization," while Black people and other non-white races are "uncivilized," then not only should whiteness be promoted through eugenics, but Blackness should be eliminated or changed. In fact, scholars like Anna Stubblefield have argued that much of the sterilization of white people in the mid-twentieth century relied on the idea of "tainted whites" by associating those of "Eastern European, Mediterranean, or Irish rather than Anglo-Saxon or Nordic descent), poor, or lacking civilization-building skills" with non-white characteristics, i.e. "subnormal cognitive ability."[453] Maintaining and enhancing "whiteness" meant protecting it from any hint of racial impurity through eugenic practices such as sterilization.

This ablenoir basis of eugenics spawned horrific medical experimentation, exploitation, and discrimination on slaves and then later Black citizens throughout the 19th and 20th centuries. Others, including Washington, have cataloged these numerous and often systematic atrocities better than I can in this project, but there are two that I want to describe here illustrate the highly intertwined nature of disability and race through ablenoir.

While it is true that the language of disability through the use of words like "feeble-minded" inspired the early uses of forced sterilization, Black people, especially Black disabled women, are more likely to be sterilized involuntarily than white people today.[454] Washington notes that this contrasts with the early forced procreation during slavery: "the consistent factor

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[452] Jess Waggoner, "'My Most Humiliating Jim Crow Experience': Afro-Modernist Critiques of Eugenics and Medical Segregation," *Modernism/Modernity* 24, no. 3 (2017): 507, doi: 10.1353/mod.2017.0057.
[453] Stubblefield, "'Beyond the Pale:' Tainted Whiteness, Cognitive Disability, and Eugenic Sterilization," 163.
[454] National Women's Law Center, *Forced Sterilization of Disabled People in the United States*, 8

was white control."[455] Whereas during slavery, a Black woman was often seen as a way for a slave owner to increase his labor force through rape and coercive breeding, the 20th century was marked by common illegal sterilizations. In fact, in the South, the forced sterilization of a Black woman was so common that it was referred to as a "Mississippi appendectomy."[456]

Even though these sterilizations would seem to indicate a progressive eugenic narrative, Black people as a source of biocapital has persisted in the US long past slavery. This perspective opened up a host of possibilities for medical researchers to exploit Black people for their research. One prominent example is the Tuskegee Syphilis Study where researchers from the US Public Health Service found a pool of Black men infected with syphilis–a disease commonly thought to rampant amongst Black men due to stereotypes about their promiscuity–and deliberately withheld treatment without the subjects' consent so they could track the progress of the disease and finally perform autopsies on the subjects' bodies.[457]

And then there is the case of Henrietta Lacks. A Black woman with cervical cancer, Henrietta Lacks went to John Hopkins Hospital in Baltimore in 1951 to receive treatment. Unbeknownst to her and without her or her family's consent, Dr. George Gey harvested some of her cancerous cells for medical research, nicknaming the sample HeLa after the patient's name.[458] These cells, which have unique genetic properties that cause them to grow continuously in a variety of environments–earning them the moniker "immortal"–are the basis of much of modern medical research and development through the last half of the 20th century through today.[459] HeLa cells were used to develop the polio vaccine and stem cell technology and to

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[455] Washington, *Medical Apartheid*, 205.
[456] Washington, 204.
[457] Washington, 157.
[458] Washington, 355.
[459] For a more thorough investigation into Henrietta Lack's story, see Rebecca Skloot's *The Immortal Life of Henrietta Lacks* (2011).

further the fields of immunology and oncology.[460] They also revolutionized genetic research, allowing researchers access to human chromosomes in ways not possible with previous tissue samples.[461] Lacks never saw the technology that her cells created: she died in great amounts of pain later that same year, unaware of her impact on medical advancement. Her family did not know that people were profiting from her cells until 1976, and they still have never received any compensation for their mother's genetic material, although they sued Thermos Fischer Pharmaceutical, a corporation that generates approximately $32 billion annually, in 2021 for a share of their profits from the HeLa cell line.[462]

These examples are not isolated. Despite all of the successes and medical advancements of the twentieth century, medical and genetic research cannot ignore the methods by which those advancements were obtained. The ability to render Black bodyminds available for medical research comes from eugenics and ablenoir perspectives, perspectives which seek to erase and debilitate simultaneously. While researchers who endorsed race science often also endorsed forcible control of Black reproduction, a control ostensibly designed to eliminate and erase Black people from existence, those same researchers often needed Black people as subjects for their experiments, often with horrific outcomes. These experiments were often justified as necessary for the advancement of medicine as a discipline, but this advancement is yet another progressive narrative designed to obscure the mechanisms by which that advancement is achieved.

Newgenics: The Human Genome Project and its descendants

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[460] Ayah Nuriddin, Graham Mooney, and Alexandre I. R. White, "Reckoning with histories of medical racism and violence in the USA," *Lancet* 396 (2020): 950, doi: 10.1016/S0140-6736(20)32032-8.

[461] Skloot, Rebecca. *The Immortal Life of Henrietta Lacks* (New York: Broadway Books, 2011), 100.

[462] Mary Anne Pazanowski, "Henrietta Lacks' Estate Sues for Profits Derived from Tissue," *Bloomberg Law*, October 5, 2021, https://news.bloomberglaw.com/health-law-and-business/henrietta-lacks-estate-sues-for-profits-derived-from-tissue.

After the horrific details of the Holocaust became widely available following WWII, public opinion and the scientific community were soured on the concept of eugenics. However, many scholars have now wondered, despite its unpopularity, if "eugenics went underground in the remainder of the twentieth century…."[463] However, as more came to be known about genetic heritage in the 1970s and '80s, genetic scientists began to realize that the idea that complex disorders and diseases such as cancer or schizophrenia could not be attributed to one gene or genetic sequence.[464] Attempts to sequence genes for certain diseases had moderate success, but calls for a database of all human genes became widespread.[465] The Human Genome Project, led jointly by the National Health Institute and Department of Energy, was founded in January of 1989 and tasked with

> determining the order, or "sequence," of all the bases in our genome's DNA; making maps that show the locations of genes for major sections of all our chromosomes; and producing what are called linkage maps, through which inherited traits (such as those for genetic disease) can be tracked over generations.[466]

The Human Genome Project touts itself as a groundbreaking research project with a wide range of applications: helping individuals learn about themselves and their ancestry, helping agricultural scientists improve food safety,[467] helping medical researchers develop new treatments and medications for cancer and rare genetic diseases, helping doctors to prescribe the best medical treatments for individuals based on their genetics, helping forensic experts investigate crime, and helping potential parents with prenatal testing.[468] All of these

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[463] Wilson, *The Eugenic Mind Project*, 25.

[464] Mukherjee, *The Gene: An Intimate History*, pt. 4.

[465] Mukherjee, *The Gene: An Intimate History*, pt. 4.

[466] "What is the Human Genome Project?" *NIH* online, October 28, 2018, https://www.genome.gov/human-genome-project/What.

[467] "15 for 15: Agriculture," *NIH* online, https://www.genome.gov/dna-day/15-ways/agriculture.

[468] "15 Ways Genomics Influences Our World," NIH online, December 20, 2019, https://www.genome.gov/dna-day/15-ways.

accomplishments within a progressive narrative that, in essence, claims that the more geneticists know about the human genome, the better medical technology and, ultimately, the quality of human life will be.

Although the Human Genome Project website is careful to distance itself from biological determinism–noting that "DNA is not your destiny"[469]–it does not take much digging to discover the eugenic implications in the way the project is positioned. I have already mentioned James Watson at the beginning of this interchapter. He was appointed the head of the Human Genome Project at its inception due to his groundbreaking discoveries in genetic research, but his belief in genetic essentialism–the idea that human beings can be determined by their genetics[470]–has caused him to espouse all sorts of eugenic views over the years. He has publicly argued over the last two decades that women should be able to abort a fetus based on the discovery of a "gay gene," suggested gene-editing to "make all girls pretty," suggested that ten percent of people have low IQs and should be cured or eliminated,[471] and that Africans and "Black employees" are not as intelligent as white people[472] Although he is now considered somewhat of an embarrassment to the scientific community and the Human Genome Project has distanced itself from him since he left in 1992, Watson's views clearly shape the way he perceives genetics and powers his research into the field.

Since the completion of the Human Genome Project, a new eugenics movement–often referred to as *newgenics*, *sanitized eugenics*, or *liberal eugenics*– has emerged within the field of

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[469] "What's a genome?" *NIH* online, October 11, 2019, https://www.genome.gov/About-Genomics/Introduction-to-Genomics.

[470] Jo C. Phelan, Bruce G. Link, and Naumi M. Feldmana, "The Genomic Revolution and Beliefs about Essential Racial Differences: A Backdoor to Eugenics?," *American Sociological Review* 78, no. 2 (2013), 170.

[471] Julia Belluz, "DNA scientist James Watson has a remarkably long history of sexist, racist public comments," *Vox*, January 15, 2019, https://www.vox.com/2019/1/15/18182530/james-watson-racist.

[472] Amy Harmon, "James Watson had a Chance to Salvage His Reputation on Race. He Made Things Worse," *The New York Time*s, January 1, 2019, https://www.nytimes.com/2019/01/01/science/watson-dna-genetics-race.html.

medical ethics. Julian Savulescu, an Australian philosopher, bioethicist, and one of the champions of newgenics, defines the key difference between the old eugenics and "newgenics"–according to the proponents of the latter–comes down to agency: "is did'. But testing for genetic disorders such as Down syndrome, Fragile X, cystic fibrosis, etc. is eugenics. The difference is that it is voluntary, based on sound conceptions of the morally good and good science, and not motivated by racist social Darwinist ideology."[473] Newgenics advocates eugenic thinking as a public health discourse centered around individual choice and responsibility instead of as a government project. No one is forced to be sterilized or killed for their "unsuitability," but instead, they might choose to terminate a pregnancy if genetic testing shows that a fetus is at risk for a disability or genetic disorder,[474] they might not choose to have children, or they might choose to utilize new gene therapies for themselves or their children.[475] It's their choice.

Just like the old version of eugenics, however, newgenics relies on a progressive narrative about the future. Compare the language of the newgenics to the original version. Harris, in responding to the philosopher Bertrand Russell, argues,

> This "progress of evolution" is unlikely now to be achieved accidentally or by letting nature take its course. If illness and poverty are indeed to become rare misfortunes, this is unlikely to occur by chance, even with the thousands of centuries that Russell envisages and evolution requires. It may be that a nudge or two is needed: nudges that will start the process, trailed in the introduction to this book, of replacing *natural selection* with *deliberate selection*, *Darwinian evolution* with *"enhancement evolution."*[476]

One wonders why Harris does not cite Galton here; after all, what he is saying is almost entirely the same as Galton's argument that humans must speed up the natural progress of evolution: "What Nature does blindly, slowly, and ruthlessly, man may do providently, quickly, and

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[473] Julian Savulescu, "Bioethics: why philosophy is essential for progress," *J Med Ethics* 41 (2015), 30.

[474] MacKellar and Bechtel, *The Ethics of the New Eugenics*, 56 and 71.

[475] MacKellar and Bechtel, *The Ethics of the New Eugenics*, 98.

[476] Harris, *Enhancing Evolution: The Ethical Case for Making Better People*, 11.

kindly."[477] The idea that eugenics is just "evolution but done better" comes from the very beginning of the field.

Edelman's figure of "The Child" pops up in a lot of new eugenics discourse as well. Eliminating childhood disease or disability is often touted as one of the goals of this strategy. Savulescu promotes a guiding principle he calls *procreative beneficence*: "couples (or single reproducers) should select the child, of the possible children they could have, who is expected to have the best life, or at least as good a life as the others, based on the relevant, available information."[478] Procreative beneficence relies on a framework that privileges a progressive narrative about children specifically: that children-in-potential will be happier if they have certain traits than current children who do not. As Kafer puts it, echoing Edelman, "The Child through whom legacies are passed down is, without doubt, able-bodied/able-minded."[479] By invoking the Child, proponents of newgenics are able to advance the notion that a better future involves the active manipulation and control of genetic material to ensure the erasure of disabled bodyminds from that future.

Eugenics, Commodification, and Debilitation

The first question I will pose for the next chapter is fairly straightforward, if a little practically fraught: can genetics, as it is currently understood, be separated from eugenics? While most medical professionals might be appalled at the notion that they practice eugenics, the truth is that many of the mechanisms that they use to diagnose and treat, especially people of color, are based on eugenic science.

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[477] Galton, "Eugenics: Its Definition, Scope, and Aims," 50.

[478] Julian Savulescu, "Procreative Beneficence: Why We Should Select the Best Children," *Bioethics* 15, no. 5 (2001): 415, doi: 10.1111/1467-8519.00251.

[479] Kafer, *Feminist, Queer, Crip*, 29.

Another rapidly rising issue is the increase in the commodification of genetic information by biotech and pharmaceutical companies since the early ‘90s. How have ideas about eugenics spawned new ideas and tech like CRISPR, ancestry testing, DNA testing in donor eggs and sperm, and prenatal testing? Who owns your genetic information? Finally, as these concerns about genetic technology and the rise of new eugenics within the sciences emerge, we must ask ourselves about the potential for these ideas to recreate the commodification of human bodies as sites of debilitation in the same way as they have been throughout the 19th and 20th centuries.

Chapter Three: When Aliens Invade: Eugenics and the New Colonizers

CW: ableist language, slurs, medical trauma, sexual assault, colonial violence

‘We used to treat animals that way,’ she muttered bitterly.
‘What?’ he said.
‘We did things to them—inoculations, surgery, isolation—all for their own good. We wanted them to be healthy and protected—sometimes so we could eat them later.’[480]

“We will teach the lesson that all creatures must learn: that we will survive this black prison even if we have to stand on the bones of every dead thing in existence.”[481]

As mentioned in Chapter 2, works of science fiction–especially those concerned with utopia–often rely on erasure of disability as a marker of progress. Since the mid-twentieth century, many of the fictional technologies described in these texts rely on some form of genetic alteration, therapy, or both. Eugenics and the manipulation of genes to produce better or superior people has not only been embedded in genetic science from its origins, but it has also been closely associated with science fiction. In fact, the two have often inspired each other. The history of science fiction over the last two centuries is riddled with tales of eugenics from H.G. Wells’ novel *The Island of Doctor Moreau* (1896) to the television series *Star Trek* (1966-1969) to the film *GATTACA* (1997).

These science fiction works can be generally classified along three major tropes. One such trope is the concept of *designer children*. The idea of designer children is very popular with many proponents of newgenics. *GATTACA* is one film that is interested in the idea of designer children. Another very common eugenics trope explored by science fiction writers is closely related to the designer children: the superhuman or transhuman. We have already seen examples of this in Chapter 2 with the X-men–mutants who have evolved to have powers inaccessible to

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[480] Octavia Butler, *Lilith’s Brood: The Complete Xenogenesis Trilogy* (New York: Open Road, 2012): 33.
[481] Cadwell Turnbull, *The Lesson* (Ashland: Blankstone Publishing, 2019): 172.

the average human. Another popular example can be found in Frank Herbert's *Dune*, where the Bene Gessert–a mysterious society of powerful women–are secretly and systematically breeding specific bloodlines in the hopes of producing a messiah-like superhuman.[482]

The third trope is the idea of a designer workforce, another species created via genetic manipulation to perform specific labor. We have already seen an example of this in *Do Androids Dream of Electric Sheep?* and *Blade Runner*, where the androids in question are biological ones. Lois McMaster Bujold's *Vorkosigan Saga* (1986) includes a species of humanity specifically designed to complete work in low gravity. Even science fiction films like *Jurassic Park* (1993) or *The Island* (2005) envision a reality in which genetically engineered species exist as biocapital for the consumption of others. All of these tropes work as metaphors or what-ifs for the question of the ethics of the development of genetic technology, the continuum of possibilities ranging from optimistic to pessimistic.

However, no matter how optimistic or pessimistic any given text is about the possibilities of genetic technology, it is difficult to separate out the development of genetic technology from its eugenic heritage. This is primarily due not only to philosophers and scientists like Galton and Davenport, but also to the ways in which that technology has historically been tied rhetorically to progressive narratives. These narratives ignore, at their own peril, the lessons of the 19th and 20th century and the very real ways in which that technology derives from research done at the expense of Black people in the US due to colonization, slavery, and ablenoir. This chapter will examine the work of two Black authors–Octavia E. Butler and Cadewell Turnbull–and their use of alien invaders as colonists to explore the history of eugenics and its warning for future genetic technology.

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[482] Frank Herbert, *Dune* (New York: Ace Publishing, 1990).

Who owns your genes?: Commodification of Genetic Technology

To reiterate the question I asked at the end of the GENOME interchapter, how has genetic technology developed along the lines of commodification? Henrietta Lacks was not the first and is far from the last example of institutions collecting and commodifying genetic material. An infamous example of this occurred in 2018 when ancestry testing company 23andMe announced a three hundred million dollar collaboration with pharmaceutical corporation GSK to use the genetic information they had collected through their ancestry testing kits to develop "new medicines and potential cures."[483] Even national institutions like the NIH and National Cancer Institutes have massive gene and tissue banks.[484] These pools of data are used to develop new medications, medical devices, and so on, but more importantly, they are worth billions of dollars in revenue for many pharmaceutical and biotech companies.[485]

Reproductive gene technologies like in vitro fertilization (IVF) and prenatal or preimplantation genetic diagnosis (PGD) are also incredibly lucrative. Globally, the fertility industry made over twenty-five billion in sales in 2019, and this number is only predicted to rise over the next decade.[486] The average cost of one cycle of IVF is anywhere between $17,000 to $25,000, and that's without any genetic testing or surgical costs, which cost thousands of dollars more.[487] IVF and PGD are often touted as miraculous technologies that can help would-be

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[483] "GSK and 23andMe sign agreement to leverage genetic insights for the development of novel medicines," July 25, 2018, https://www.gsk.com/en-gb/media/press-releases/gsk-and-23andme-sign-agreement-to-leverage-genetic-insights-for-the-development-of-novel-medicines/.

[484] Katie Hasson and Marcy Darnovsky, "Genetic Justice: Identity and Equality in the Biotech Age," *Development* 63 (2020): 141, doi: 0.1057/s41301-020-00240-6.

[485] Rebecca Skloot, *The Immortal Life of Henrietta Lacks*, 316.

[486] "The fertility business is booming," *The Economist*, August 8, 2019, https://www.economist.com/business/2019/08/08/the-fertility-business-is-booming.

[487] Amy Klein, "I.V.F. is Expensive. Here's How to Bring Down the Cost," *The New York Times*, April 18, 2020, https://www.nytimes.com/article/ivf-treatment-costs-guide.html.

parents of all genders, ages, and sexual orientations to conceive and to have healthy children and to assist women to have more control over the process of reproduction.[488]

However, one does not have to look far to find the connections between the way such technology is often used and eugenics. Reproductive technology has more and more heavily relied on a genetics framework in order to help parents conceive and to decide which fetuses should be allowed to be born. IVF usually results in multiple fertilized embryos, creating a whole host of ethical questions about personhood and research that are beyond the scope of this project, but usually only one or two are implanted. How do medical professionals and prospective parents choose which one? Usually through some form of PGD, turning the diagnostic gaze towards the genes of the embryo in hopes of identifying the "best" one for implantation and discarding the ones that may potentially become disabled.

One of the creators of IVF, Robert Edwards, saw his new technology as having a direct impact on the future: "Soon it will be a sin of parents to have a child that carries the heavy burden of genetic disease. We are entering a world where we have to consider the quality of our children."[489] Here we can see the impact of such progressive narratives as Savulescu's procreative beneficence and "The Child." In his philosophical work on procreative beneficence and IVF, Savulescu directly appeals to an imaginary "best child" as a symbol of a better life.[490] He argues that parents who engage in IVF or PGD have the obligation to select an embryo without genetic markers for disease. He cites a hypothetical example in which a couple must choose between a "healthy" embryo and an embryo with genetic markers for asthma. The

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[488] Sarah Franklin, *Biological Relatives: IVF, Stem Cells and the Future of Kinship* (Durham, Duke University Press, 2013): 37.

[489] Robert Edwards, quoted in Osagie K. Obasagie, "The Eugenics Legacy of the Nobelist Who Fathered IVF," *Scientific American*, Oct. 4, 2013, http://www.scientifi camerican.com/ article/ eugenic -legacy -nobel-ivf.

[490] Savulescu, "Bioethics: why philosophy is essential for progress," 28.

obvious choice, he writes, is the "healthy" embryo because the one with the predisposition towards asthma will most likely have a reduced quality of life, using the specter of wheelchair use as a symbol of suffering.[491] As genetic science progresses, Savulescu believes that screening for what he calls "non-disease genes"–behaviors like memory, intelligence, sexual orientation, and creativity, amongst others–will also be aspects of a child that parents can dictate because they impact the ability of a child to live "the good life."[492] This idea that certain physical or behavioral traits can be dictated by manipulation of the genetic code not only embraces genetic essentialism, but it also places value on a certain kind of life: an abled or even super-abled one.

Putting aside the fact that most geneticists no longer believe that one gene is responsible for any one characteristic or behavior, this application of IVF and PGD is controversial for many disabled activists and scholars. While many disabled people support reproductive rights, including abortion,[493] many also see PGD as eugenic, many referring to it as a genocide. For an example, since prenatal and PGD testing for Down's syndrome began to be encouraged for expecting parents in 1985, almost 80%-90% of pregnancies where the fetus what diagnosed with Down's syndrome were terminated in some centers, leading to a dramatic reduction in births of people with Down's syndrome.[494] By recommending abortion in cases when a fetus is diagnosed with a disability, medical professionals are often relying on newgenics discourses: "while the rhetoric is that abortion is the answer that best for the child–to avoid its suffering–it all too easily slip into a discussion of the relative costs to society and contribution to society that variously

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[491] Savulescu, "Procreative Beneficence: Why We Should Select the Best Children," 416-17.

[492] Savulescu, 421.

[493] Although the disabled community, like all communities, is not monolithic on this issue: Sara Luterman, "Exclusive: How do people with disabilities feel about abortion? New poll sheds light for the first time," *The 19th*, May 10, 2022, https://19thnews.org/2022/05/how-people-with-disabilities-feel-abortion/.

[494] Paul Steven Miller and Rebecca Leah Levine, "Avoiding genetic genocide: understanding good intentions and eugenics in the complex dialogue between the medical and disability communities," *Genetics in Medicine* 15, no. 2 (2013): 99, doi: 10.1038/gim.2012.102.

'disabled' people make."[495] Many also point out that some PGD technologies, especially the "at home" kits, are not as accurate as advertised.[496] The question really is, to refer back to Savulescu, what does "best child" mean? Any answer to that question lies in the realm of newgenics, optimization for biolabor, and homogenization.

Finally, gene editing technology, the most well-known of which is CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats), is often invoked in newgenics discourses. This is perhaps the example most associated with science fiction, but the technology to edit the genes of a fetus, a child, or even an adult is very real, if still in the very early stages of infancy. The concept of gene editing as a way of perfecting the human species comes from a progressive eugenics narrative, but it also is driven by the idea that people are commodities, biocapital. One of the odd answers that newgenics seems to have towards genetically selecting or modifying fetuses is that parents own their fetus's or children's genetic material. Thomson-Garland calls this "'velvet eugenics'–one that standardizes human variation in the interest of individual, market-driven liberty at the expense of social justice and the robust diversity and inclusion upon which modern egalitarian social orders depend."[497] By embracing genetic essentialism, proponents of gene editing are defining healthy as productive, optimized, and able, all qualities favored by a capitalist system. People are reduced down to their genes: "The perspective of genetic welfare is that it is the body, alone, that determines our social being…"[498] Many worry that this sort of genetic data gathering and editing will result in new forms of genetic

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[495] Vint, *Bodies of Tomorrow: Technology, Subjectivity, Science Fiction*, 63.

[496] Aatish Bhatia, "F.D.A. Warns Patients About Some Prenatal Genetic Tests," *The New York Times*, April 20, 2022, https://www.nytimes.com/2022/04/20/upshot/prenatal-genetic-tests-warning.html.

[497] Rosemarie Thomson-Garland, "How We Got to CRISPR: the dilemma of being human," *Perspectives in Biology and Medicine* 63, no. 1 (2020): 34.

[498] Vint, Technology, *Bodies of Tomorrow: Subjectivity, Science Fiction*, 63.

discrimination and debilitation by employers and health insurance companies, despite current laws prohibiting such practices.[499]

It is easy to see then how the field of genetics has been shaped by eugenics and commodification, that the technologies that we associate most with genetics are often plagued with ethical questions about how, why, and if they should be used. The science fiction texts below engage with these questions as well as to explore how these questions are often tied to disability, race, and ablenoir throughout the 19th, 20th, and 21st centuries. By linking genetic discourses to eugenics, these texts are able to establish genetic technology as an avenue for new mechanisms of colonialism. These texts establish that newgenics, despite its protestations, sees human reproduction just as Galton and Davenport did: something that can be controlled and guided just as animal or plant reproduction is.

***Dawn* (1987)**

Octavia E. Butler was often confused by her contradictory desires in her writing: she did not believe “humanity was fixable”–thus shunning utopian science fiction–and yet she constantly wrote “fix-the world scenarios.”[500] This contradiction is often what makes her writing so complex and difficult to apply straightforward defamiliarization or metaphorization. The dissonance between her cynical view of human actions–drawn often from historical examples of ablenoir, colonialism, and slavery–and her attempts to make sense of a viable future for that

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[499] Karen J. Whitt, McKenna Hughes, Elizabeth S. Hopkins, and Ann Maradiegue, “The Gene Pool: The Ethics of Genetics in Primary Care,” *Annual Review of Nursing Research* 34, (2016): 146-147, doi: 10.1891/0739-6686.34.119.

[500] OEB 1143, entry dated May 21, 2003, quoted in Gerry Canavan, *Octavia E. Butler* (Champaign: University of Illinois Press, 2016), chap. 5.

humanity often resulted in narratives that deconstruct and reconstruct multiple viewpoints withing the same text.

Many scholars of the trilogy focus on *Dawn*, the first installment of the *Xenogenesis* trilogy,[501] as it is the best conceived and most engaging novel of the three. However, Butler herself envisioned the trilogy as the exploration of the birth of a new species. The narrative of the trilogy is one of alien invasion or an alien rescue, or perhaps both. *Dawn* (1987), the first novel, begins with the awakening of Lilith Iyapo, a human woman, from stasis on an alien ship 250 years after most of humanity and much of Earth has been destroyed. She learns that she and the other surviving humans have been rescued by the Oankali, an alien species. The Oankali are a species of genetic engineers, and they intend to merge with the human species in order to "trade" genetic material via advanced versions of the technology mentioned above: vast pools of genetic material, IVF, PGD, and gene editing. The first novel narrates how Lilith is chosen by the Oankali to assist them in their goal of joining with humans. The second and third novels are from the POV of two of Lilith's children, Oankali-Human hybrids known as "constructs," concerning the ongoing process of merging the two species, despite human resistance, and the renewal of Earth.

The complexity of Butler's narrative(s) in *Xenogenesis* and the resistance to straightforward metaphor lends itself to interpretation via multiple frameworks. One way the series resists straightforward interpretation is via the structural disjointment between each installment in the trilogy. The first novel is primarily presented to us from the POV of Lilith, a human woman; the second from the POV of Akin, the first male Oankali-Human construct born to a human (Lilith); and the third from the POV of Jodahs, the first Oankali-Human construct

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[501] Also known as *Lilith's Brood*.

ooloi (also born to Lilith). The first two novels use a third person limited POV while the third is a first person POV. This splinters the narrative of the Oankali trade with the Humans into an assemblage of memory, ideology (both human and Oankali), and biology. It also highlights the temporal, spatial, and bodily fluctuations of such an assemblage. This structural disjointment between and within novels causes a breakdown of traditional defamiliarization readings. In short, this text(s) asks to be read within a constellation of shifting meanings and cognitive dissonances: the reader must constantly evaluate their positionality to the text and to the characters within multiple frameworks presented.

Many scholars such as Eva Cherniavsky read the series as a defamiliarized narrative about US slavery and colonization.[502] Others such as Dagmar Van Engen read the Oankali as queering gender and sexual norms.[503] Still others such as Vint and Lisa Dowdall view the Oankali ability to gene mix and edit as an exploration of cyborg ethics concerning gene technology and the way it shapes humanity, rather than the other way around.[504] There are numerous articles that debate the utopian potential in the series: is this series utopian, dystopian, or anti-utopian?[505] Even more puzzling, many scholars view the Oankali and their society favorably despite their status as "invaders."[506]

On the surface, the Oankali are very much like the alien invaders from 1950s and 1960s pulp science fiction. In the long tradition of aliens representing the Other in science fiction, the

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[502] Eva Cherniavsky, "Subaltern Studies in a U. S. Frame," *Boundary 2* 23, no. 2 (1996): 85-110, doi: 10.2307/303808 and Sandra Cox, "Sparks from the Tail of a Comet: Historical Materialism and Genetic Imperialism in Octavia E. Butler's *Xenogenesis* Novels," *[Inter]sections* 19 (2016): 48-72.

[503] Dagmar Van Engen, "Metamorphosis, Transition, and Insect Biology in the Octavia E. Butler Archive," *Women's Studies* 47, no. 7 (2018): 733-754, doi: 10.1080/00497878.2018.1518620.

[504] Vint, *Bodies of Tomorrow: Technology, Subjectivity, Science Fiction*, 64, and Lisa Dowdall, "Treasured Strangers: Race, Biopolitics, and the Human in Octavia E. Butler's *Xenogenesis* Trilogy," *Science Fiction Studies* 44, no. 3 (2017): 506-525, doi: 10.5621.44.3.0506.

[505] See Hoda M. Zaki's, Claire P. Curtis', and Naomi Jacob's work on the trilogy.

[506] Canavan, *Octavia E. Butler*, chap. 5.

Oankali certainly embody what Vint calls a "threat to change human morphology and genetic identity."[507] Physiologically, the Oankali are diverse due to their hybridized nature but many of them are described having large grey or brown invertebrate bodies with tentacular appendages/sensory organs. In fact, Lilith's first impression of an Oankali is one of a mythical monster, "Medusa," sharing appearances and biology with both snakes and insects.[508] They are tri-gendered: male, female, and ooloi. The ooloi are non-binary and mate with both male and female Oankali (and humans); they also are the bioengineers of the Oankali species. While all Oankali can produce chemical and biological alterations to their surroundings and to bodies (allowing them to heal themselves and others, among other things), the ooloi feel an intense drive to examine, sustain, and reproduce genetic material.

This drive informs Oankali culture, history, and epistemology. The first Oankali that Lilith meets, Jdahya, tells Lilith that the Oankali are "powerfully acquisitive. We acquire new life—seek it, investigate it, manipulate it, sort it, use it. We carry the drive to do this in a minuscule cell within a cell—a tiny organelle within every cell of our bodies."[509] This organelle–which Jdahya defines as the "essence" and "origin" of the Oankali–drove the Oankali from a long since abandoned homeworld in search of new species with whom to "trade" genetic material.[510] During each trade, the Oankali splits into three groups. The first group is the Dinso who will stay on Earth and merge with humans there. The second is the Toaht who will take a portion of the human survivors on their ships and leave Earth to merge with them in space on the

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[507] Vint, *Bodies of Tomorrow: Technology, Subjectivity, Science Fiction*, 65.
[508] Butler, *Lilith's Brood: The Complete Xenogenesis Trilogy*, 13.
[509] Butler, 41.
[510] Jdahya notes that one definition of the word Oankali is "gene trader." Butler, 41.

way to another world. The third group, the Akjai, functions as a control group in case the trade goes badly, leaving unchanged in a new ship to travel for a new trade elsewhere.[511]

One reason that so many scholars and even human characters in the novel interpret the Oankali favorably is that Oankali society seems much more egalitarian than human society. Oankali are peaceful, resolving any conflicts through a telepathic process of debate, compromise, and resolution. There is no power structure within the Oankali: each member contributes to the whole society through their particular interests and talents. In contrast, human societies are dysfunctional at best and brutal at worst in all three novels. Two hundred and fifty years before the beginning of the novel, humans were engaged in a nuclear world war that destroyed most of humanity and the planet, a war that the Oankali carefully monitored in order to assure themselves that humans were not committing a "mass suicide."[512] The first human man that Lilith meets when the Oankali begin to awaken the others tries to rape her.[513] The others that are awakened to follow her respond to her leadership with racism, homophobia, sexism, and violence, killing Joseph, the person she bonds with.[514] The Oankali by comparison seem remarkably functional, almost utopian.

The Oankali also embrace a progressive narrative about the future, one that emphasizes the priority of human genetic survival, albeit in a different form. As part of the trade, Jdahya assures Lilith that humans will survive, something that seemed impossible to her in the mass destruction of the war. In exchange for the genetic material that the Oankali want, they promise that the humans will have their "world again," an Earth that the Oankali have restored through

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[511] Butler, 35.
[512] Butler, 15.
[513] Butler, 95.
[514] Butler, 223.

some form of genetic terraforming.[515] They promise longer lives, perpetual youth,[516] amongst other transhuman powers. For a species that had tried to kill themselves in a war previously, the very concept of survival into the future is progressive.

However, despite all of these apparent positives, if read through a progressive-debilitation framework, the novel actually supports a more critical view of the Oankali and their motives, despite their persuasive arguments to the contrary. I have to agree with Gerry Canavan who argues that "that in fact the Oankali do almost nothing but harm the humans, in almost literally every possible way."[517] This trilogy is about invasion, just an invasion that promises a better world while simultaneously debilitating the human population as a genetic source. Although both humans like Lilith, and the reader, is tempted to believe the Oankali narratives about themselves and humanity, examining what the Oankali do, not just what they say, reveals a use of the eugenics-debilitation circuit in order to control and exploit humans as biocapital.

Let's begin with "the trade," the Oankali mission to merge with other species and exchange genetic material. Although the Oankali present the trade to Lilith as if it is accomplished equally, they control the terms of the trade, leaving the humans with little to no bargaining power. The stakes are high: "conditions of the trade mark a clear shift in ownership, not just of material goods, but also of the biological and industrial future of the human race."[518] However, the Oankali version of the future is realized mostly through a eugenic view of genetics and population control. The Oankali genetic technology realizes most eugenicists' wildest dreams. They can read the genetic codes of all species they come across. The ooloi can

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[515] Butler, 40.

[516] Butler, 25.

[517] Canavan, *Octavia E. Butler*, chap. 5.

[518] Cox, "Sparks from the Tail of a Comet: Historical Materialism and Genetic Imperialism in Octavia E. Butler's Xenogenesis Novels," 51.

manipulate genetic material within their own and others' bodies. They can clone genetic material[519] and edit reproductive cells.[520] More importantly, no Oankali or human is allowed to reproduce naturally. Instead, the ooloi perform a very advanced version of IVF in which they genetically engineer fetuses and implant them in the mother's body.[521] This allows them to specifically correct anything in the genetic code that they see as defective.

Furthermore, while the Oankali say that they are equal partners with humans in this exchange of genetic material, the Oankali employ classic colonizing techniques on the humans in order to ensure their cooperation. The Oankali's needs for genetic and biological information as a natural resource "evoke European traders in their initial forays into establishing a colonial empire."[522] the Oankali are very good at manipulating humans, including Lilith, through both imperialist methods and through progressive narratives: "Put simply, the Oankali exacerbate a neocolonial situation in which humans are radically and permanently disempowered, and then step in to provide 'assistance.'"[523] By stripping humanity of their planet, their ability to move freely, or make reproductive choices, the Oankali ensure that humanity must rely upon them for survival, provided that they accept the trade. They continually undermine human autonomy through methods of coercion, gaslighting, and the promise of a better future: "The Oankali adroitly camouflage their colonizing intent, enforcing restrictive reproductive rights on humans, in a rhetoric of altruistic salvation."[524] Lilith notes bitterly that her initial solitary confinement

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[519] Butler, *Lilith's Brood: The Complete Xenogenesis Trilogy*, 98.
[520] Butler, 42.
[521] Only female Oankali and humans bear children in this society.
[522] Aparajita Nanda, "Politics, and Domestic Desire in *Lilith's Brood*," *Callaloo* 36, no. 3 (2013): 775.
[523] Canavan, chap. 5.
[524] Nanda, "Politics, and Domestic Desire in *Lilith's Brood*," 775.

and then submersion into Oankali culture fosters dependency on the Oankali, for information, resources, and eventually emotional support: "He wanted her dependent."[525]

Lilith as their choice of first contact symbolically reflects the strategy of the Oankali as colonizers. As a Black woman, Lilith represents the way in which Black people have been experimented on throughout US history: "Lilith's 'condition' in the text invokes the 'condition' of her captive ancestors-the systematic dispossession of the African American subject and 'theft of the body' itself."[526] Her body is changed without her consent many times in the novel, even when Oankali representatives tell her that it will not be.[527] Some of the changes would, on the surface, appear to be positive. Nikanj, the ooloi who she bonds with, notes that she is now "as strong and as fast as her nearest animal ancestors were"[528] and that she will live longer than most unaltered humans.[529] She has an eidetic memory. However, she is also sexually assaulted many times by the Oankali, who often drug her into submission with pleasurable telepathy. At the end of the novel, she is impregnated by Nikanj without her knowledge, despite Nikanj telling her at the beginning of the novel that it[530] would not do so. Nikanj justifies this by telling her: "And you are ready to be her mother. You could never have said so…. Nothing about you but your words reject this child."[531] Vint and Peppers have both linked this scene to the history of Black slaves and the control slave owners had over fertility, raping Black women and forcing them to give birth.[532]

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[525] Butler, *Lilith's Brood: The Complete Xenogenesis Trilogy*, 39.
[526] Cherniavsky, "Subaltern Studies in a US Frame," 105.
[527] Butler, *Lilith's Brood: The Complete Xenogenesis Trilogy*, 6.
[528] Butler, 155
[529] Butler, 24.
[530] As with most ooloi, Nikanj uses the pronouns *it* for itself, so I will also be using these pronouns when referring to it and other ooloi.
[531] Butler, 247.
[532] Vint, 70 and Cathy Peppers, "Dialogic Origins and Alien Identities in Butler's *Xenogenesis*," *Science Fiction Studies* 22, no. 1 (1995): 50.

Lilith herself specifically ties this treatment to coercive medical practices. The quotation at the beginning of this chapter is from her at the very beginning of the novel when an Oankali explains the medical procedures performed on her while she was asleep:

> ‘We used to treat animals that way,’ she muttered bitterly.
>
> ‘What?’ he said.
>
> ‘We did things to them—inoculations, surgery, isolation—all for their own good. We wanted them to healthy and protected—sometimes so we could eat them later.’[533]

Although Jdahya laughs at her comparison, Lilith correctly identifies a relationship dynamic between the Oankali and humans as similar between a farmer and his livestock. The Oankali see humans as biocapital and often adopt a paternalistic or patronizing tone with humans, who they say are not complex enough to understand the Oankali.[534] This mirrors the ways in which it often “falls to the colonizer to articulate the meaning of the captive subject.”[535] To them, humans are animals, subjects that the Oankali can do with what they wish.

One of the biological aspects that make humans so valuable to the Oankali is the ability to grow cancer. Like Henrietta Lacks before her,[536] Lilith is used by the Oankali for her genetic material, especially her cancer.[537] At the beginning of Dawn, Lilith asks Jdahya why she has a scar on her abdomen that she did not have before her captivity. He responds that she had a cancerous tumor that an ooloi observed via surgery. The ooloi then chemically induced her body to reabsorb the cancer and then performed a kind of gene therapy to fix her genetic predisposition for cancer: “Correcting genes have been inserted into your cells, and your cells

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[533] Butler, *Lilith’s Brood: The Complete Xenogenesis Trilogy*, 32

[534] Butler, 227.

[535] Cherniavsky, “Subaltern Studies in a US Frame,” 107.

[536] A story which Butler certainly knew and was directly inspired by for this novel. Van Engmar, “Metamorphosis, Transition, and Insect Biology in the Octavia E. Butler Archive,” 750.

[537] Butler, *Lilith’s Brood: The Complete Xenogenesis Trilogy*, 20.

have accepted and replicated them. Now you won't grow cancers by accident."[538] Lilith notes the word choice "by accident" here but does not realize the extent of the Oankali interest in her and other humans' ability to grow cancers. The Oankali are fascinated by cancer, calling it "beautiful."[539] They view it as "an ability" and a "talent" that they had not encountered in previous trades: "Humans called this condition cancer. To them, it was a hated disease. To the Oankali, it was treasure. It was beauty beyond Human comprehension."[540] To the Oankali, cancer will enable "incredible amplification of their powers, essentially granting them a maximum plasticity that would include immortality and shape-changing, just for starters."[541] Through the merging of the species, they offer to share this talent with humanity, but it remains the primary object of the trade.

The Oankali justify all of this through the argument that humans suffer from a biological disorder, a conflict in their genetic codes. The Oankali believe the humans as having a fundamental genetic disability, "handicapped," is actually the word used by Jdahya. According to the Oankali, human "bodies are fatally flawed…You have a pair of mismatched genetic characteristics."[542] According to the Oankali, humans are genetically predisposed to be intelligent and hierarchical, two behaviors that will enable the worst in each other and eventually destroy humanity. Although the Oankali admit that there are other factors that contribute to the conflict, they insist that self-destruction is genetically predetermined in all unaltered humans. This is the central premise to the argument for the trade, and it is repeated, mantra-like, many times in the series by various Oankali and by both POV characters in *Adulthood Rites* and

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[538] Butler, 31.
[539] Butler, 23.
[540] Butler, 551.
[541] Canavan, *Octavia E. Butler*, chap. 5.
[542] Butler, *Lilith's Brood: The Complete Xenogenesis Trilogy*, 35.

Imago, respectively. This attitude reflects a philosophy of genetic essentialism on the part of the Oankali, a philosophy that allows them to promise better bodies and better lifespans to humans while simultaneously using those bodies as biocapital.

I have already tied genetic essentialism to eugenics in this project, but the entire Oankali progressive narrative is built around the eugenic logic "that our world would be a better place if disability could be eliminated."[543] This applies not only to physical and mental disabilities but also to what the Oankali see as a behavioral disability on the part of humans. Joseph, another human who Lilith is encouraged to have sex with, makes the direct connection between eugenics and what the Oankali are doing, noting that "Hitler might have done something like that after World War Two if he had had the technology and if he had survived."[544] All of this relies on a progressive narrative of the future and "the Oankali specifically refusing to allow certain types of bodies, conditions, and genetic predispositions to persist into the future."[545] The Oankali also compare the human species to "a defective child" who "must die."[546] Clair questions this particular wording of how the Oankali see their relationship to a "defective" species: "Is that an empirical must, meaning the child will die? Or is it a normative must, meaning we must ensure that the child dies? For the Oankali, it is both: such a child will die and in dying will reveal why it should die."[547] If species survival–both of humans and Oankali–is the goal of this trade, then the Oankali believe that eliminating the human genetic flaw is key to that goal.

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[543] Garland-Thomson, "The Case for Conserving Disability," *Bioethical Inquiry* 9 (2012): 339-40, doi:10.1007/s11673-012-9380-0.
[544] Butler, *Lilith's Brood: The Complete Xenogenesis Trilogy*, 143.
[545] Canavan, *Octavia E. Butler*, chap. 5.
[546] Butler, *Lilith's Brood: The Complete Xenogenesis Trilogy*, 531.
[547] Clair P. Curtis, "Utopian Possibilities: Disability, Norms, and Eugenics in Octavia Butler's Xenogenesis," *Journal of Literary & Cultural Disability Studies* 9, no. 1 (2015): 25.

This essentialism aligns the entire human species with disability, allowing the Oankali to treat them collectively as beings in need of a cure. Vint notes that "This representation brings home the issue at stake in genetic discourses that advocate the purging of this or that gene from the gene pool: the elimination of people like me. In engaging with the world of Butler's novel, no human is able to consider his or her self as exempt from this 'me,' as the privileged possessor of 'normal' genes."[548] Vint implies that the purpose of this is to assist readers in empathizing with those most likely to be targeted by eugenics,[549] however, Canavan points out the Oankali never give any evidence to support this claim despite their assertions that they can "feel" it in humans' genetic codes.[550] He observes that all of the Oankali's choices for humans to trade with are abled, straight, cis, and young.[551] Despite their claims that they appreciate and value genetic variation, it becomes clear that they only value that variation when it is valuable to the trade. If it is irrelevant, or "defective," they will discard it or manipulate it to their advantage.

Moreover, the Oankali specifically deny independent reproduction to humans.[552] They must reproduce with the Oankali or not at all. The Oankali assure this by forcibly sterilizing all of the surviving humans, promising to undo the procedure only if those humans accept Oankali control and allow the ooloi to manipulate genetic structure and implant embryos. This strategy not only is tied to the forcible sterilization of disabled and Black people during the 20th century, but it also ensures that the Oankali version of the future is the only version of the future. The humans involved in this process are not allowed any input on what kind of offspring they will have, which privileges Oankali ideals. All of this is done in the name of producing the best

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[548] Vint, *Bodies of Tomorrow: Technology Subjectivity, Science Fiction*, 68.
[549] Vint, 68.
[550] Canavan, *Octavia E. Butler*, chap. 5.
[551] Canavan, chap. 5.
[552] Butler, *Lilith's Brood: The Complete Xenogenesis Trilogy*, 245.

children, ones free from the human flaw and from disability. In many ways, the Oankali are operating in the same paradigms as Savulescu's procreative beneficence and Harris' enhanced evolution, erasing certain kinds of people in favor of a better future.

Adulthood Rites (1988)

The next installment in the trilogy complicates this interpretation further by shifting the POV from Lilith, a human, to her child, Akin, a Oankali-human construct. The hybrid POV of this novel complicates the more straightforward colonialist narrative of the first one. Nanda argues that colonization depends on a strict division between the colonizer and the colonized–the Oankali and Lilith–but that "this, however, was not an easy task, because these seminal categories were threatened by hybrid citizens."[553] In *Adulthood Rites*, Akin is the first male construct, a test of the Oankali's ability to eliminate the conflicting genetic elements. He is kidnapped as a child by human resisters who attempt to raise him as a human despite his Oankali heritage. He eventually escapes, growing into an adult with his family, but because of his time among the humans and his half-human heritage, he is better able to articulate and advocate for humanity amongst the Oankali, drawing attention to the flaws in their genetic essentialism.

The central struggle between the humans and the Oankali in *Adulthood Rites* is one of reproduction rights. The Oankali, keeping their promise from the first novel, refuse to allow humans to reproduce independently. The independent humans, on the other hand, see this as a denial of a central biological right. Having children, to them, symbolizes the future of the human species: "We don't have kids, and nothing we do means shit."[554] From the perspective of the resister humans, as they are known in the books, children represent the future of the species,

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[553] Nanda, "Power, Politics, and Domestic Desire in *Lilith's Brood*," 774.
[554] Butler, *Lilith's Brood: The Complete Xenogenesis Trilogy*, 402.

relying on the image of “The Child.” According to them, having children with the Oankali is a genocide, an end to the species.

Some of them, in a desperate attempt to have their own children, begin to kidnap Oankali-human constructs, including Akin, to raise them as humans. What makes this novel complex is that, in many ways, the Oankali are right about the independent humans. Many of the humans Akin meets during his tenure among them are incredibly xenophobic toward the Oankali and brutal towards one another. Akin witnesses many examples of rape, murder, torture, and other forms of violence amongst the humans. In one particularly disturbing section, some humans in the resister village discuss surgically removing the tentacles from two of the construct children in an effort to make them more human than Oankali.[555] After reading these sections, it is tempting to align oneself with the Oankali in believing that humans are incapable of creating a sustainable and egalitarian society. After all, a genetic disorder would seem to explain the self-destructive tendencies that humanity has shown over and over again throughout human history and within the context of the trilogy. The possibility of solving humanity’s problems by eliminating a genetic defect is appealing as a progressive narrative: once the defect is cured, then humanity will cease its violence.

However, this novel also begins to show hints of the issues within Oankali society, which seemed so utopian in the first novel (especially in the way they present themselves to Lilith). The genetic essentialism that the Oankali apply so rigidly to humans also affects their own understandings of family, sex, gender, and reproductive rights. In the first novel, the Oankali families are composed of a male, a female, and an ooloi along with their children. In *Adulthood Rites*, Nikanj explains to Lilith that the new species that they are creating will require a different

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[555] Butler, 374.

family structure based on optimizing the new genetic material from the humans: families will now be composed of females (Oankali and human), an ooloi, and the children, while the males of species will "wander" between family units.

On the one hand, gender as it is understood by the Oankali queers the human understanding of gender and family. On the other hand, the strict adherence to gender roles recreates a new kind of homonationalism. To participate in Oankali society is to participate in the "trade": an activity that can only be accomplished through reproductive family units. Gender is still a sexed concept. While understood very differently within Oankali society, it is still a tool to be used in service of these familial units. There are no gay, lesbian, or trans Oankali within these units.[556] There are no intersex Oankali: they classify all biological beings according to their reproductive biology. Female bodies are coded as such for their ability to perform reproductive labor. "The Oankali's vision of the future may be less sexist and less racist than our present, but it is more homophobic and transphobic, with a sort of compulsory heteronormativity that sees both the backward-looking reactionary male humans and their Oankali captors agreeing that all the humans are to pair off in monogamous heterosexual couples in order to have children."[557] Compulsive heteronormativity for the sake of reproduction–even in the case of polyamorous family units like the Oankali have–confines both human and Oankali existence to biology and genes, once again rendering them as units or breeding stock within the Oankali eugenics program.

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[556] Van Engmar disagrees with me, arguing that "all Oankali are trans" due to the way all Oankali go through a bodily transition into their gender at puberty, the one biological process that the Oankali will admit that is influenced by environment as well as genetics. However, I would argue that the Oankali genders after puberty are still strictly defined in terms of biology and reproduction, something that becomes fixed and no longer fluid after the metamorphosis. Van Engmar, "Metamorphosis, Transition, and Insect Biology in the Octavia E. Butler Archive," 745.

[557] Canavan, *Octavia E. Butler*, chap. 5.

Ultimately, Akin uses his position to advocate for the humans, claiming that while the Oankali's assessment of humanity is correct, in order to treat them as equal partners, they must have more of a choice in their own genetic destiny. Akin, the POV character in the second novel, struggles to reconcile the resistor beliefs in agency with the Oankali determinism:

> 'Humans are freer to decide what they want,' he said softly.
>
> 'They only think they are free,' Dehkiaht replied.
>
> Yes. Lilith was not free…. But what about the other resisters? They did terrible things to each other because they could not have children. But before the war—during the war—they could have children. The Human Contradiction held them. Intelligence at the service of hierarchal behavior. They were not free. All he could do for them, if he could do anything, was to let them be bound in their own ways. Perhaps next time their intelligence would be in balance with their hierarchical behavior, and they would not destroy themselves.[558]

Akin, the Oankali-Human construct character who seems to understand the human need for choice, recognizes the danger in the Oankali rigidity of thinking: the absolute certainty of the "god eye" way of knowing that Haraway disputes. He alone of the Oankali believes that just as the Oankali has an Akjai group that does not participate in the trade that humans must be allowed to form their own Akjai group as well in order for the trade to be equitable He argues that the genetic essentialism of the Oankali cannot account for all factors: "Chance exists. Mutation. Unexpected effects of the new environment. Things no one has thought of. The Oankali can make mistakes."[559] This is a direct challenge to the Oankali genetic essentialism, which posits that everything about humans can be known by the Oankali. Vint argues, "While Butler is clearly critical of the self-destructive tendencies of humans, she sees even greater risks in the hubris of assuming that there is an all-knowing subject position–alien or scientific–that could presume to correct these faults."[560] The other Oankali disagree with him, calling it "a cruelty" to allow

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[558] Butler, *Lilith's Brood: The Complete Xenogenesis Trilogy*, 466.
[559] Butler, 501.
[560] Vint, *Bodies of Tomorrow: Technology Subjectivity, Science Fiction*, 71.

humans to build a society that will eventually destroy itself again; however, they admit to Akin that his genetic makeup and experience living with the resisters qualifies him to decide the resister's fate. They ultimately agree to allow the surviving human resisters a third option: to be transported to a Mars colony where they can reproduce unhindered, a decision that Canavan connects to the history of the removal of Indigenous peoples to reservations.[561] By removing these humans from Earth, the Oankali are essentially removing them from the equation of what happens to the human species, convinced that humans will kill themselves all over again. This strategy ties into the white nationalist anti-immigration policies adopted by eugenicists in the US: by not allowing these humans to reproduce alongside the Oankali on Earth, the Oankali are banishing a diversity of species in favor of one species: the one they are creating.

Imago (1989)

The final book in the *Xenogenesis* trilogy further explores the cracks in Oankali society while ultimately ending on an ambiguous note about the future. *Imago*–a title that means the final or adult form of an insect–focuses on another of Lilith's children, the first ooloi of the Oankali-human constructs. Jodahs represents the pinnacle of the Oankali plan, but also their first error as they were not intended to "mix" an ooloi so soon. This is the first indication that Akin's acknowledgement that the Oankali do not know everything is true: it is Jodah's environment and its relationship with Nikanj that triggers the transformation to ooloi, not its genetic code.

However, despite its accidental transformation into an ooloi, Jodahs, even more than Akin, fully embraces the Oankali view of genetic essentialism, seeing disability especially as a defect to be cured. Despite recognizing the potential for genetic material that humans would

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[561] Canavan, *Octavia E. Butler*, chap. 5.

reject as "bad" like cancer, Jodahs and the other Oankali express shock and horror that any human would want to live with a disability. When Jodahs meets Tomas and Jesua, two resistor humans with large tumors on their skin, it expresses an intense desire to correct their genetic defects, even at the risk of being shot: "Why should you become more and more disabled?...Why should you die when you can live and be well?"[562] Later, it says "Blindness will be bad….Deafness will be even worse."[563] This is perhaps the most blatantly ableist that the Oankali have been across the trilogy, specifically treating disability as a tragedy that cannot endure into the Oankali future. Fortunately, in Jodah's view, these disabilities can be easily remedied through Jodah's skills as an ooloi who can edit the genetic material of humans like previous ooloi and ensure that their offspring with it will also not acquire these disabilities, essentially erasing them from existence.

While the first two books occasionally dipped into body horror in their exploration of Oankali-human relationships, *Imago* fully embraces the genre by revealing the POV of the ooloi during the genetic manipulation process. When Jodahs links with Jesua sexually, it reflects on how Lilith once observed to Nikanj:

> 'It's a good thing your people don't eat meat. If you did, the way you talk about us, our flavor and your hunger and your need to taste us. I think you would eat us instead of fiddling with our genes…That might even be better. It would be something we could understand and fight against'
>
> Nikanj had not said a word. It might have been feeding on her even then.[564]

This is the first time that the reader encounters an ooloi perspective on the process of bioengineering, a process that reveals the literal consumption of genetic material by the ooloi in order to sustain itself and reproduce. Such body horror seems to be a reminder of the alterity of

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[562] Butler, *Lilith's Brood: The Complete Xenogenesis Trilogy*, 618.
[563] Butler, 621.
[564] Butler, 680.

the Oankali, even within a construct like Jodahs. Human bodies here are biocapital, a valuable component in the trade because of their genomes.

A large part of this is due to the human disposition for cancer and the abilities it gives Jodahs as a Oankali-human construct. Jodahs reflects on how fortunate Nikanj was that Lilith possessed the ability during the events of the first novel: “Nikanj might have died without Lilith’s help. If it had lived, maimed, it could not have functioned as an ooloi. Its mates would have had to find another ooloi…But then, we wouldn’t exist—we, the children of Nikanj had constructed gene by gene, chromosome by chromosome.”[565] But while cancer gives Nikanj the ability to regenerate a limb, it gives Jodahs the power to shapeshift into different forms, allowing it to become less frightening in appearance and more desirable to humans. However, this shapeshifting comes with unintended consequences. While it gives Jodahs physical abilities beyond that of an Oankali, Jodahs cannot control the shapeshifting without help from its human mates. In fact, Aaor, Jodah’s sibling who also metamorphizes into an ooloi, goes through a painful transition into adulthood because there are no humans around to help it stabilize its form. Its body reverts to reflecting the natural world around it. It becomes a “deep grey,” “glistening with slime,” scaly, hairless, and cannot talk.[566] It is in danger of losing its identity completely unless human mates can be found to stabilize it, to tell it what it is. In this way, the genetic essentialism of the Oankali is again challenged, despite Jodah’s beliefs. Vint argues that “the construct ooloi are literal representations in which the body itself changes in response to the perceived demands of the community of others,”[567] emphasizing the importance of environment and social forces in controlling the individual.

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[565] Butler, 55.
[566] Butler, 681.
[567] Vint, *Bodies of Tomorrow: Technology Subjectivity, Science Fiction*, 74.

Near the end of the novel, the Oankali meet to discuss what to do with Jodahs, Aaor, and the families they have begun to create. For Jodahs, and the other Oankali, this is a victory. A merging of the two species seems inevitable, and this new species has taken its first steps towards independence from both humanity and the Oankali. A brighter future where both coexist and help one another awaits in those "tiny positioning movements of independent life" promised in the last line of the novel. Many scholars such as Nanda read this line as an indication that the relationship between humans and Oankali has become more equal, moving "on to seek a redress by redirecting it to create a new world in another planet, a world of possibilities, of complexities that admits a past but promises a future of regenerative hope."[568] However, readers must remember another promise: the one from the first novel. This merging is only one of many: this new species will continue the colonization process at a later date. In fact, this new species is more Oankali than it is human because the Oankali absorb the species they meet into their eugenic mission to "trade," to own genetic material. By indoctrinating the new Oankali–ones who have taken the best of human genetics and discarding the rest–the Oankali ensure that their progressive narrative is the only one that survives.

***The Lesson* (2019)**

Butler's trilogy spawned a whole genre of Black science fiction about alien invasion and colonialism. To finish this chapter, I will examine a contemporary take on this trope in order to illustrate the continuing conversation about colonization and eugenics within Black science fiction. *The Lesson* by Cadwell Turnbull re-examines the alien invasion metaphor that Butler introduced within the context of the evolution of "newgenics" and 21st century genetic

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[568] Aparajita Nanda, "Re-writing the Bhabhian 'Mimic Man': Akin, the Posthuman Other in Octavia Butler's Adulthood Rites," *Ariel* 41, no. 3-4 (2010): 131.

technology, while also more firmly linking these concepts with 19th century colonialism in the Caribbean. Although not as focused on the process of genetic manipulation as Butler's novels, *The Lesson* does explore the connection between eugenics, colonization, and debilitation. Published in 2019, the novel looks at the nuances of a first contact between the Ynaa, an alien species, and humans in the US Virgin Islands.[569] When the Ynaa first appear, their ship hovering over the island, they promise the world leaders (read the US government) that they will exchange lifesaving medical technology with humans for leasing the island for five years for an important research mission that they will not fully disclose.[570] Like the *Xenogenesis* trilogy, the novel layers different perspectives on the relationship between Ynaa and humans, creating a narrative out of the POVs of several humans, the most prominent of which are the humans Derrick and Patrice and the Ynaa ambassador to the humans, Mera.

In many ways, the Ynaa are similar to the Oankali. They can shapeshift into human form, but their true form is gray with many tentacles on their heads.[571] They have superior medical and energy technology to humans.[572] While they are not biologically genetic engineers like the ooloi, their technology relies on "cybernetic cells" called reefs, nanotechnology that has the capability of genetically altering humans and Ynaa alike.[573] They often are condescending towards humanity, speaking "with the open condescension of adults speaking to a child."[574] However, unlike the Oankali, they do not attempt to influence humanity with progressive narratives or promises of a better world. Their violence against humanity is much more overt than the medical

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[569] Turnbull grew up on St. Thomas.

[570] A five-year mission on the part of the Ynaa seems to be an ironic reference to the five-year mission of the USS Enterprise in *Star Trek*.

[571] Turnbull, *The Lesson*, 44.

[572] Turnbull, 68.

[573] Turnbull, 94.

[574] Turnbull, 68.

violence that the Oankali employ. While they are not engaged in open warfare and claim that they intend no harm to humanity, any aggression, inconvenience, or even perceived slight is met with death. When asked about these killings, the Ynaa merely respond that humanity needs to learn "the lesson."[575]

As the novel unfolds, we discover that the "lesson" is the Ynaa belief in eugenics and the survival of the fittest. This belief stems from an ancient war in which the Ynaa committed genocide against the other species on their homeworld.[576] To justify this war and their subsequent relationships with other species, the Ynaa believe that strength is the only metric that matters: if humans cannot survive against them, then they do not deserve to survive.[577] This is fueled by the belief that the universe is a cruel place designed to kill all living things, thus strength and survival, even at the expense of other species, is key. Ohoim encapsulates this belief perfectly when he tells Mera, "We will teach the lesson that all creatures must learn: that we will survive this black prison even if we have to stand on the bones of every dead thing in existence.[578] This allows them to justify their control of the local population through fear and violence in much the same way that the population was controlled by European and American colonizers in the 19th and 20th centuries.

The Ynaa belief that they deserve to survive at the expense of others also fuels their research. Mera reveals at the end of the novel that the reason that the Ynaa were on Earth, the reason they had been searching through the galaxy, was to find the cure for death, to become immortal, to achieve what they call Yn Alta, "the one true goal."[579] Immortality–life without

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[575] Turnbull, 68.
[576] Turnbull, 121.
[577] Turnbull, 121.
[578] Turnbull, 172.
[579] Turnbull, 100.

death–is one of the markers of perfection for many proponents of eugenics. It represents a future in which disease and disability have been completely eradicated, for the Ynaa. This, to the Ynaa, represents the ultimate victory against the universe. While it is unclear what on Earth exactly will help the Ynaa to accomplish this goal, Mera's research centers around genetic samples obtained from hundreds of species of animal, plant, and human tissue.[580] Although the Ynaa colonization of Earth does not extend to controlling Earth governments or human reproduction, they demand that the natural resources of the planet be available to them as their right as the invading species.

The Ynaa eugenic philosophy fuels their violence against humans, who they see as a lesser species. The belief in survival of the fittest has always been tied to eugenics, but Turnbull also ties it to 19th century colonization of the islands. One chapter, aptly entitled "A History of Invasions" describes St. Thomas as an island of invasions, first by the Ciboney people, then by Arawaks, then by the Caribs, and finally by the Europeans.[581] The novel layers chapters of the present day timeline with chapters detailing how Mera first came to earth in 1732 in order to test for the components that the Ynaa were looking for. While there, she took the form of a young Black woman and experienced slavery over generations, the slave rebellion of 1733 and its bloody aftermath. She developed relationships with various humans, especially one human Siba who died during the rebellion. Mera tells Derrick that her experiences have taught her "a new lesson."[582] This new lesson is that "the universe doesn't care about strength."[583] She recalls that her strength did not matter when she lost the people she cared about over the years. Being on the other side of a colonial force allowed her to develop empathy for humanity, something that cannot exist alongside eugenic logic.

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[580] Turnbull, 94.
[581] Turnbull, 36.
[582] Turnbull, 68.
[583] Turnbull, 121.

The violence that was used to control Black people is paralleled with the violence the Ynaa use in the present day. Mera notes that most of the killings have been of men and boys, paralleling the ways in which historically Black men have been targeted for death by white institutions because of their “aggression.”[584] When a young man kills a Ynaa in retaliation for killing his brother, the Ynaa respond by killing all of the men on the island, twenty-five thousand in total.[585] The only ones who escape are the ones helped by Mera and Derrick. This disproportionate response of violence on the part of Ynaa is directly connected with the violence of the white plantation owners who put down the slave rebellions in St. Thomas, killing and brutalizing thousands of slaves. It also decimates the island’s population, not only through the removal of one half of the people who live there, but also through the trauma of enduring such atrocity.

The medical experimentation part of colonization is also explored in the novel, although not as thoroughly as in Butler’s trilogy. Turnbull makes a reference to Henrietta Lacks in the character of Henrietta, Derrick’s grandmother. About midway through the novel, Henrietta is diagnosed with cervical cancer, just like Lacks was. However, her story has a slightly different ending. Because she does not trust the Ynaa and their technology, she refuses the treatment offered to her by a doctor.[586] Although she approaches it from a religious background, she sees the Ynaa as invaders and their gifts as suspect, relying on her own lessons learned through Black experiences of ablenoir over the past century. Although Henrietta eventually dies of her cervical cancer, she reflects that she has not “compromised herself” or given the Ynaa any information, despite the fact that she has no idea what research they are conducting.[587] This is a reversal and

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[584] Turnbull, 94.
[585] Turnbull, 180.
[586] Turnbull, 147-148.
[587] Turnbull, 158.

repudiation of the real life story of Lacks, allowing a Black woman to make her own choices about her body. By reclaiming Lack's story and having the character Henrietta end on her own terms, Turnbull illustrates the profound mistrust that many Black people have of medical institutions due to the horrific experiments and forced sterilizations performed on them by those institutions.

To conclude, I would like to return to my first question from the GENOME interchapter: can genetics, as it is currently understood, be separated from eugenics? It would appear that both Butler and Turnbull would answer no. What occurs in their books has happened before and is happening right now, albeit with new and untested technology. Butler wants us to remember that "the assumptions we bring about the body and its meaning will inform the choices we make as we reshape our social world with genetic technology."[588] Turnbull wants us to remember the past and to refuse to learn "the lesson" that eugenicists and colonizers would like to teach. Both of them ask us to interrogate where we get our knowledge of genetics, where we get our technology, and–to borrow the words of Lilith– "Learn and run!"[589]

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[588] Vint, *Bodies of Tomorrow: Technology, Subjectivity, Science Fiction*, 64.
[589] Butler, 247.

CODA

CW: medical gaslighting, references to mass death, depression, suicidal ideation

"Critique can become merely an expression of profound cynicism, which then works to sustain dominant culture."[590]

"Did you know that hope and despair are nearly identical in code?"[591]

When I first started working on this project back in 2018, I never dreamed that the cracks that I already saw in the US healthcare and medical systems would be subjected to the pressures of a global pandemic like the one we are still experiencing now in 2022, almost two years after the first confirmed US case of COVID-19 on January 21, 2020. Medical professionals, hospitals, global supply chains of PPE, and patients alike have all been pushed to their absolute limits time and time again. At the time of writing this, almost a million people have died from COVID-19 infections in the US, more deaths than any pandemic or war the US has ever engaged in.

It is hard for me to write about the future right now. It feels like the future is shrinking. My generation already has a lower life expectancy than the last one. Living through the worst pandemic in US history, realizing that for every step forward in civil rights we have moved a step back, worrying that the next climate catastrophe will be *the one*, has pushed my ability to imagine a future, any future, to a breaking point. My apparent helplessness to intervene or help prevent these catastrophes, especially those affecting myself and my queer and disabled loved ones, has caused me to almost quit this project several times and has certainly triggered one of the worst depressive episodes of my life.

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[590] bell hooks, *Teaching Community: A Pedagogy of Hope* (London: Routledge, 2013).
[591] *Matrix Resurrections*, directed by Lana Wachowski (2021; Burbank, CA, Warner Bros. Pictures, 2021), HBO.

It turns out that hope, "engaging in the act of utopia," sometimes is just a choice to live, to survive into the future, and it is a choice that must be made daily, as Lauren Olamina does in *Parable of the Sower*. But how does one navigate this cognitive dissonance between Cassandra-like impotence and the imperative to organize, to dream of a better future?

"It feels like everything I did, everything we did, none of it mattered:" Failure and the Affects of Despair in *Matrix Resurrections* (2020)

When it came out in 1999, the film *The Matrix*, directed by the Wachowski siblings, was an instant part of the science fiction film canon. It inspired a whole genre and aesthetic of film, video games, and music, as well as a renaissance of Plato's metaphor of the cave, kung-fu movies, and cyberpunk. The film and its two less-successful sequels, *The Matrix Reloaded* (2003) and *The Matrix Revolutions* (2003), follow the story of Neo (Keanu Reeves), a young hacker who realizes that the world around him is a simulation–the Matrix–designed by AI to imprison humans in order to use them as an energy source. Neo is recruited by Morpheus (Lawrence Fishburne), Trinity (Carrie-Ann Moss), and other members of the human resistance to fight back against the machines. The films rely on an explicit construction and deconstruction of the Chosen One narrative: Morpheus believes Neo to be a Messiah-like figure who is able to manipulate the digital reality of the Matrix in a way that no human has before and who will lead the humans to victory against the machines.

The original *Matrix* trilogy is an extremely flexible metaphor. Many have read it as a trans allegory (especially after both Wachowskis came out as trans):[592] Neo is an egg[593] who

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[592] Lana Wachowski in 2010 and Lily Wachowski in 2016. Emily St. James, "How The Matrix universalized a trans experience — and helped me accept my own," Vox, March 30, 2019, https://www.vox.com/culture/2019/3/30/18286436/the-matrix-wachowskis-trans-experience-redpill.

[593] A common term for a trans person who has not yet realized that they are trans.

discovers the all-encompassing social pressures of cisnormativity and heteronormativity. Others see it as a critique of capitalism or the all-encompassing power of the internet to create and recreate digital realities. Others read the film as a religious or philosophical metaphor designed to provoke existential questions or to examine the process of enlightenment. Alt-right groups have also placed a claim the franchise: being “red-pilled” has become a short-hand for “all the ways that social justice issues, particularly those related to feminism, can cause a person (usually a young man, though women have also used the term) to not be their truest self.”[594] Both Wachowskis have attempted to distance their work from conservative groups attempting to co-opt it,[595] but it seems like the franchise had taken on a life of its own. So, when it was announced that Lana Wachowski was returning to the franchise to make a sequel to the trilogy almost 20 years after the first film was released, many were uncertain of what exactly she had to say.

The fourth film, *The Matrix Resurrections* (2021) picks up right where the first one began, with Neo once again imprisoned in the Matrix. This time, instead of an anonymous hacker, Thomas Anderson[596] is now a famous video game designer who created a series of games called *The Matrix* about a digital reality ruled by machines and a hero, Neo, who is chosen to fight them. This allows the film to re-examine the first trilogy through a new meta perspective, literally recreating scenes from the OG film and questioning the frameworks and philosophies of the original trilogy.

As mentioned in Chapter 2, science fiction, even texts that are not concerned with utopia, are often interested in progressive stories. The original *Matrix* trilogy is no exception: the basic

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[594] St. James.

[595] When Elon Musk and Ivanka Trump tried to reference taking the red pill on Twitter in 2020 as a conservative political statement, Lilly Wachowski responded in her own Tweet, “Fuck both of you.” Wachowski @lilly_wachowski, “Fuck both of you,” Twitter, May 17, 2020, https://twitter.com/lilly_wachowski/status/1262104754496339968?lang=en.

[596] Neo’s birth name.

plot follows the organization of a rebellion against a dystopian regime, the conclusion of which is a rousing victory in which Neo sacrifices himself to free machines and humans alike from the vicious feedback loop of debilitation. Although *Reloaded* and *Revolutions* both subvert and play with the Chosen One trope introduced in the first film, the ending of the movie is triumphant and hopeful in the same way that the end of *Return of the Jedi* is hopeful: the evil empire has been defeated and theoretically a new, more utopian, society will now take its place. *Matrix Resurrection* is more interested in the idea of the failure of this revolution. In many ways, Neo and the humans have failed to meaningfully change the status quo of the Matrix, which still exists to imprison humans, especially Neo, who the machines rescued and are now using (along with Trinity) as one of their sole power sources. This examination of failure, of critique of the first three films, allows Wachowski to explore the nuances of what hope actually looks like in a system designed to debilitate.

The digital reality of the Matrix in *Resurrections* is much more effective at imprisoning Neo than the original version. The shift from anonymity to famed video game designer allows the machines to more fully control Neo's perception of reality by actively gaslighting him using frameworks of disability and cis-heteronormativity. During the first third of the film, his therapist, the Analyst, tells him that he is in recovery from a severe psychotic episode in which he believed himself to be the main character of his video game, Neo, and that he tried to kill himself by jumping from a building, believing he could fly. Neo is on medication for this episode, the famous blue pills that represent the choice to stay in the Matrix. He is constantly being dead-named as Thomas Anderson, his real name Neo is reduced to a character in a game. He experiences both bodily dysmorphia, often not recognizing himself in the mirror, and deja–vu (a sign that the Matrix is glitching), but every incident in which he questions his reality is trivialized and dismissed by the Analyst as unreliable.

Within this storyline, there is a nuanced critique of the limitations of modern therapy for mental illness and gender dysphoria, specifically Cognitive Behavioral Therapy (CBT). The Analyst, who is revealed later to be the real antagonist of the film, uses CBT techniques as a way of dismissing Neo's dysphoria. He has Neo perform grounding exercises, for example, asking him to tell the Analyst what he can see, smell, taste, hear, and feel, a common CBT practice to ward off anxiety attacks.[597] He tells Neo to not use negative self-talk "we don't use the word crazy," and yet he is constantly telling Neo that his observations about the world are signs of psychosis.[598] This critique is reflective of the critique many minority groups have begun to voice about the usage of CBT by therapists to dismiss or gaslight their patients into believing that their experiences are invalid.

The film is also deeply invested in the affects of heteropatriarchal capitalism and the pain of trans and queer people forced to participate in these affects. Pain and despair as mechanisms of the slow death and debilitation is also central to this film: the Analyst reveals that it is in fact the pain and despair of both Neo and Trinity, his longtime partner from the first three films, that power the new Matrix.[599] Neo's dysmorphia is revealed to be the result of the Matrix literally changing the way he appears to other people, hiding his identity by modifying his Digital Self Image or DSI.[600] Both Neo and Trinity have been in deep, relentless pain and misery for the past 60 years, caught in feedback loops where they can yearn for one another but are not allowed to be together. Trinity, who is also coded as trans in the original trilogy, is imprisoned as Tiffany or

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[597] "In the Analyst's office," *The Matrix Resurrections.*
[598] "In the Analyst's office," *The Matrix Resurrections.*
[599] "Bullet time," *The Matrix Resurrections.*
[600] "Neo takes the red pill," *The Matrix Resurrections.*

Tiff, a femme housewife with a husband named Chad and two children.[601] She is trapped in heteropatriarchal roles of wife and mother, a cog[602] in the reproductive machine and a nightmare to the androgynous, leather-clad hacker and freedom fighter Trinity.[603] She is miserable even before she remembers her life as Trinity, asking Neo if wanting a family is something a woman is programmed to want. When she plays the Matrix games and recognizes herself in the main female lead, her husband laughs at the idea that she could be that person, and she laughs along with him: "I hated myself for laughing."[604]

However, unlike the first films, which emphasized Neo's and Trinity's pain as a symptom of his awareness of the facade (a symptom that the machines try to suppress), this film emphasizes the ways in which the pain is actually the end result of the new Matrix. The Analyst tells Neo, "Did you know hope and despair are nearly identical in code?"[605] Unlike the previous Matrix, this one relies on the torture of Neo and Trinity in order to produce energy, harnessing their connection and keeping them apart (in the same way many queer couples are kept apart). The Analysis emphasizes the cruel optimism of this new system: "In my matrix, the worse we treat you, the more we manipulate you, the more output."[606] This Matrix illustrates the circuit more clearly that the first three films because it assimilates Neo and Trinity's power (their queerness and love) into the system so it can debilitate them through promises that never materialize.

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[601] "Neo meets Trinity," *The Matrix Resurrections*.

[602] Literally. TIFF is an old graphic image file format invented in 1992 and has largely been replaced by more updated file types.

[603] Trinity in the original trilogy is also coded as trans.

[604] "Neo and Trinity have coffee," *The Matrix Resurrections*.

[605] "Bullet time," *The Matrix Resurrections.*

[606] "Bullet time," *The Matrix Resurrections.*

When Neo is finally able to escape the gaslighting through the help of humans outside the Matrix, he is confronted by his own failure from the first trilogy: “Doesn’t feel like it changed anything. The Matrix is the same or worse…It feels like everything I do, everything we did, none of it mattered.”[607] As he learns what happened during the sixty years he was trapped in the Matrix, he discovers other failures. One such failure exists in what he is told happened to Morpheus and Zion, the only human city and headquarters of the resistance in the first films. It turns out that Zion was destroyed, along with Morpheus, because Morpheus believed that Neo’s sacrifice at the end of the third film had fixed all of humanity’s problems. Niobe (Jada-Pinkett Smith), the head of a new city IO, tells Neo that Morpheus was too invested in the idea that Neo was the one and in the idea that all machines were evil and all humans were good, causing him to continue to war against the machines until the city was destroyed.[608] There are so many parallels in Morpheus’ failure, as Niobe tells it, to the way that many progressive liberals believe that racism, sexism, and homophobia are things of the past. By believing that all those issues are “fixed,” many people cannot see the ways in which the US systems are built on those very ideas.

Niobe tells Neo that *he* did not fail, but that he inspired her and others to do better than Morpheus and Zion: “You changed the meaning of our side.” Io, the new city, is a cooperative between machines who reject the Matrix and humans, dedicated to protecting peace, reinvigorating the environment (which had been destroyed by the war) and to build a better place for all to live. This is symbolized in the strawberry that Niobe gives Neo, the first strawberry in the real world since before the machines took over: “Zion could have never built this.” By investing in cooperation and community between humans and friendly machines, Niobe is able to create a place where people can thrive.

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[607] “Neo talks to Bugs,” *The Matrix Resurrections.*

[608] “What happened to Zion,” *The Matrix Resurrections.*

However, there is another failure here: Niobe's. By prioritizing Io's citizens and refusing to be drawn into any conflict with the machines running the Matrix, she is sacrificing those humans still trapped in the Matrix, including Neo and Trinity. Even though she has thrown off the ideology of war–which she says is just as powerful as the digital reality of the Matrix–she still does not have real hope. Bugs (Jessica Henwick), one of the hackers who disobeyed Niobe and freed Neo from the new Matrix, tells her, "You gave up on people."[609] Niobe's pessimism about whether the system can be changed allows the Matrix to continue its debilitation of humanity, maintaining the circuit and preserving the happiness and peace of a few at the expense of the many. This brings to mind the bell hooks' quotation at the beginning of the chapter: "Critique can become merely an expression of profound cynicism, which then works to sustain dominant culture."[610]

In the midst of this multi-faceted exploration of progressive failures, there is hope represented in the characters of Neo and Trinity and in their ability to fly in the Matrix. Neo is asked many times in the film if it was true he could fly, an ability he gained at the end of the first film in the series. Beyond the obvious Superman parallels, flight in this series represents the impossible or the less imaginable thing: something those around Neo cannot understand because they have no framework for knowing what it looks like. When Neo and Trinity are trapped together on top of a building at the end of the film, surrounded by agents of the machines and faced with the probability of imprisonment again, Trinity tells Neo, "We can't go back." Neo replies, "We won't."[611] They run together and leap off the edge of the building, and Trinity, not Neo, flies them to safety. This reveals that while most people believed Neo to be the One, he is,

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[609] "Bugs is demoted," *The Matrix Resurrections.*
[610] bell hooks, *Teaching Community: A Pedagogy of Hope,* 3.
[611] "Trinity flies," *The Matrix Resurrections.*

in fact, part of a Dyad with Trinity. Their love forms the basis of their power, and it allows them to imagine what now seems unimaginable: a better world.

At the end of the film, Trinity and Neo, now both flying together, visit the Analyst in the Matrix. He tells them that those humans still in the Matrix will not accept freedom, that they will be stuck in the cruel optimism of the system, but Trinity interrupts him to tell him "We aren't here to negotiate" and to thank him for giving them "a second chance" to remake the Matrix.[612] We do not get to see them fix the Matrix. We do not get to know if they free humanity or live happily ever after or even if their changes result in a better world. This is not a progressive narrative: it is one that deals with the idea of hope and how second chances are sometimes all we have. Instead of the generic "the rebels won" brand of hope, this more nuanced hope–a battered and bruised and tempered hope–is rooted in the idea that what we do needs to be more radical than we have ever dreamed before.

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[612] "A second chance," *The Matrix Resurrections.*

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