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The Valley of Science and Fiction: Capitalism, labor, race, and environment in the Silicon Valley

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The Valley of Science and Fiction:
Capitalism, labor, race, and environment in the Silicon Valley

Senior Project Submitted to
The Division of Social Studies
of Bard College

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Annandale-on-Hudson, New York

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Introduction: Cyborgs, Androids, and the Valley

Let's start with two conceptual definitions: the first is the machine and the second is the robot. For Marx, the machine is based on a particular implement, such as a factory assembly line, yet it also takes on another quality. One in which separates workers from their skills through its transfer to the machine.¹ Robot, or “robota” in its original Czech, first appeared in the play Rossum's Universal Robots by Karel Čapek. Released in 1921 the play is about:

The old inventor, Mr. Rossum (whose name translated into English signifies “Mr. Intellectual” or “Mr. Brain”), is a typical representative of the scientific materialism of the last [nineteenth] century. His desire to create an artificial man — in the chemical and biological, not mechanical sense — is inspired by a foolish and obstinate wish to prove God to be unnecessary and absurd. Young Rossum is the modern scientist, untroubled by metaphysical ideas; scientific experiment is to him the road to industrial production. He is not concerned to prove, but to manufacture.²

Consequently, the word “robota” is tied up in a definition that is of something neither humanoid nor machine. However, what is even more interesting about these words and their historical context is that they both can be used to understand labor, as well as structures of control under an industrial capitalist society. Moreover, the use of the word “robota” in a play a century ago seems to imply a connection between man and machine in relation to systems of control as well as strategic placement of bodies in these systems to achieve a given goal.

¹ Marx, Karl. “Chapter 15: Machinery and Large-Scale Industry .” In *Kapital* 1, 1:492–508, 1867.

² John Jordan , “The Czech Play That Gave Us the Word 'Robot',” The MIT Press Reader (MIT, January 14, 2021),

<https://thereader.mitpress.mit.edu/origin-word-robot-rur/#:~:text=The%20word%20itself%20derives%20from,were%20neither%20metallic%20nor%20mechanical.>

Associating the word “robota” with a creation that fictional Mr. Rossum sees as a means to an end in industrial production implies a need for “man” in labor that must be “scientifically modified” along the way to acquire the most out of a given mode of production. This solution is sought out in the play by the creation of a humanoid tied to mechanical labor: the robot. Consequently, the way this has been reflected through the history of industrial production is through the transfer of “skill” from laborer to machine and subsequent replacement of the hierarchy of skilled workers Marx speaks of with hierarchies of difference.

What this paper intends to provide is an assessment of the way in which the issues of the environment, race, and class in Silicon Valley are a reflection of systems that had already existed in previous industries within the Valley. Moreover, this paper intends to show that a specific understanding of the environment must be realized in order to connect Silicon Valley histories to the greater technology industry which it is an epicenter to. This is the understanding that “even if one thinks that human activity is somehow independent of nature, there is no avoiding one fact: proletarianization was rooted in the governance of nature.”³ Despite this, Silicon Valley is allowed to maintain the image of a beacon of progress at the center of innovation. As such, it is not uncommon to associate the Valley with science fiction and geeks who strive to create a future on Mars. However, the association of the Valley with science fiction is curious for a number of reasons. This paper argues that some writers and creators within the science fiction genre write about themes present in both Silicon Valley’s history as well as the history of industry and labor under capitalism. Furthermore, this project’s objective is to help its readers understand, through the lens of science fiction works, why the physical and social structures Silicon Valley creates have their grounding not in the progress of the future but a reliance on past modes of production

³ Jason W. Moore, “The Rise of Cheap Nature,” in *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism* (2016), pp. 78-115

and labor. Through this I hope to make visible the effects that the current economy and previous economies in the Valley have had on the environment and social structures.

For the majority of the Valley's history, industry relied on cheap labor in order to provide the necessary means for the acquisition of resources. Due to reinforcement of structures of difference, imposed by colonialism and capitalism as well as close geographic proximity, this labor was in most cases performed by Mexican or Mexican American laborers. Such was the case of the miners working for the New Almadén mine. Miners, however, did not escape the impacts of their profession after clocking out of a shift. The artificially constructed structures of difference that confined many laborers to the strenuous work in the mines followed the workers home to Spanishtown, a settlement separated from the white residents of the Valley. Miners, as well as their families, were subject to the "deleterious effects [mercury excavation and processing had] on the local ecosystem, and residents' most serious ailments resulted not from explosions or other industrial accidents, but rather from mercury poisoning."⁴

Subsequently, this is our first glimpse into how society in the Valley is becoming constructed in order to acquire a certain type of labor as well as laborer. One can also see the importance of the laborer and their ties to the ecosystem around them as a point of recognition of the insufficiencies of this system of organization on a broader scale. The final aspect that becomes clear, and will remain clear throughout the Valley's history, is that difference is even constructed into the physical landscape of the Valley. In the case of the settlement of Spanishtown, this was reflected through the separation of Mexican laborers and their families from other residents of the Valley. Ultimately, the result of this system is a form of labor which is

⁴ Stephen J. Pitti, "Chapter 3: Transnational Industries," in *The Devil in Silicon Valley: Northern California, Race, and Mexican Americans* (Princeton, NJ: Princeton University Press, 2003), pp. 58 -58.

very much controlled in their contract with industry, reflecting in some ways a “robot” form of labor.

However, this industry in some ways lacked the utilization of the machine as a means to divide up labor. This would come with the modernization of the agriculture industry in the Valley. During this period in Santa Clara’s history, extending from the depression era to the mid-twentieth century, the main economy of the area relied on the labor of cannery and field workers. Field workers during this period were exposed to an array of toxic chemicals sprayed down from planes during crop dusting. Chemicals from the canneries and agricultural runoff would also pollute the waterways as well as drinking water of those living in the area: most times, the families of the workers. Spread of the use of these technologies was paired with innovation in the agriculture industry bringing crops with traits that paired nicely with mechanized production.⁵ With this came the appropriation of technologies used in agribusiness, such as the crop-dusting plane by the laborer for their community as well as labor organization as we see with the Royal Chicano Air Force.⁶ The portrayal of the planes used for crop dusting also helped tie agribusiness technology to the histories of United States militarism and control. With this appropriation, however, farm workers started to create their own visions of the future. Curtis Marez coined the terms, “farm worker futurism and agribusiness futurism” in reference to this period in the Valley’s history.

Marez argues, “technology has long been central to the United States’ relationship to Mexico.”⁷ Moreover, this relationship of technology, the agriculture industry, and labor in the Valley has many times been utilized as a motif in the writings of science fiction writers in order

⁵ Marez, Curtis. “Farm Workers in the Machine .” Introduction. In *Farm Worker Futurism: Speculative Technologies of Resistance*, 1–2. Minneapolis, MN: University of Minnesota Press, 2016. pp 22

⁶ See page 12 Figure 3

⁷ “Ibid.” pp9

to comprehend how these systems might play out in the future. One clear example of this is Alex Rivera's film *Sleep Dealers*. The film depicts Mexican agricultural workers operating fruit picking robots in the United States from a warehouse in Mexico. Separated from the labor which they are performing, the laborers essentially become completely separated from the ability to organize. In this case, the use of the science fiction genre not only draws direct inspiration from California labor history, but also is able to give the watcher a clear example of how the machine operates as a decentralizing force, as well as one for control over labor in a technologically progressed future.⁸ For Marez, this is no mistake, "science fiction centers agriculture in part because California's agricultural economy has been so important to visions of the future in the nation and the world."⁹ Additionally, he also suggests that the reason both mainstream and speculative science fiction have taken inspiration from farm workers is due to the draw of futurism on both worker and business sides of agriculture as a means of capturing the public eye.

Moreover, science fiction creators such as George Lucas and Octavia Butler's close geographic proximity to the Valley at the same time in which labor struggles were occurring in agribusiness cannot be overlooked, as those events had impacts on each of their works. In fact, Marez highlights this through showing the overlap in locations of 1960s counterculture hotspots in which George Lucas and Cesar Chavez would have both been influenced within and influenced by. We can clearly see that Lucas seems to appropriate the struggles of these same farm workers into characters such as Luke Skywalker who is a landless farmer. "Which is to say that the Lucas trajectory combines the countercultural affiliations – with middle-class white

⁸ See page 12 Figure 1

⁹ "Ibid." pp18

conservatism characteristic of nearby agricultural towns.”¹⁰ It is also easy to find evidence of Butler’s works being influenced by historical events in the Valley simply due to the existence of an archive of her files available at the Huntington Library.¹¹ Many of the papers within the collection are studied in order to understand how Butler’s work can be read to uncover the intersections of race and the environment amongst other things.

Insomuch as science fiction operates as a genre regardless of what an individual writer might bring to their individual works, its association with the motifs of both the robot laborer and the structure of the machine are always present. What a lot of these science fiction works have in common, consequently, are societies entirely based around structures of control that reflect systems of not only the past, but also the present. Thus, providing us with a basis for its use to analyze the path of history that led to Silicon Valley’s development.

Given the influence of California’s agriculture on science fiction writers of all sorts, we can now begin to weave in how this was translated into day-to-day operations within Silicon Valley’s technology industry. From the industry perspective, “the companies that produce the hardware and shape the culture of new digital media were built on the historical substrate of agribusiness and incorporated many of its political ideologies and labor practices.”¹² This most likely had something to do with the documented discrimination of companies such as IBM and General Electric against hiring ethnic Mexicans.¹³ Thus, in many ways keeping a steady stream

¹⁰ Lisa Nakamura, Peter A. Chow-White, and Curtis Marez, “Chapter 4: Cesar Chavez, the United Farm Workers, and the History of Star Wars,” in *Race after the Internet* (New York, NY: Routledge, 2012), pp. 85-106.

¹¹ Curtis Marez, “Octavia E. Butler, After the Chicana Movement,” Digital Object Identifier System (University of California, San Diego, 2018), <https://doi.org/10.1080/00497878.2018.1518621>.

¹² Marez, Curtis. “Farm Workers in the Machine.” Introduction. In *Farm Worker Futurism: Speculative Technologies of Resistance*, 1–2. Minneapolis, MN: University of Minnesota Press, 2016. pp40

¹³ Stephen J. Pitti, “Chapter 6: Braceros and Business Machines,” in *The Devil in Silicon Valley: Northern California, Race, and Mexican Americans* (Princeton, NJ: Princeton University Press, 2003), pp. 58 -58.

of so-called “unskilled” labor readily available. Subsequently, during the mid-century mainstream labor groups did not focus on these causes. Essentially, the futurism present in agribusiness, with its underlying goals of erasure of the worker from view, translates easily from industry to industry due to racialized hierarchies that have been depended upon before either of these industries were present in the Valley. It was simply given a sleek mid-century refurbishment and promises of innovations for the greater progression of society.

This “promise of innovation” is, unfortunately, very much meant to degrade the organizational ability of workers within the technology industry, just as it was with workers in the agriculture industry before. Consequently, because the body of the laborer and environmental impact are linked within this system of production, there are disastrous effects on the ability to view the environmental costs of this industry. Notably, because the environment has been a uniting factor in organizing many times over in the Valley. Not only that, but also innovations made in the agriculture industry and the growth of the technology industry were both products of the Cold War. Moreover, the electronics industry faced the same expulsion of left-wing union leaders in the 1950s as the agriculture industry as a result of the Cold War. However, the technology industry faced this in the very young stages of its life. To add fuel to the anti-union fire, innovation was associated with the deskilling of professions. In the nearby industry of agribusiness, it is impossible that the future of labor in the technology industry is mutually exclusive from this. To further back this claim up, some of the methods used to discourage unions pioneered in the Silicon Valley, “... like the team-concept method for organizing workers on the floor, were then used to weaken unions in other industries...”¹⁴

¹⁴ Bacon, David. “Organizing Silicon Valley's High Tech Workers .” dbacon.igc.org. Accessed December 1, 2022. <http://dbacon.igc.org/Unions/04hitec0.htm>.

“Types of machines are easily matched with each type of society—not that machines are determining, but because they express those social forms capable of generating them and using them.”¹⁵ This malleability of the machine to express the structures of society while also contributing to them is one of the reasons why the themes of science fiction are crucial to understanding the technology industry in the Valley. This definition of different types of machines can aid in the understanding of their ability to transform industry while maintaining pathways in physical infrastructure, and labor in order to acquire its needs. Consequently, the structures imposed by various innovations of machinery in the Valley, regardless of industry, would be inferred to always be done with the interest of the business it's being used for. Hence, structures of previous industries are reinforced time and time again in the Valley due to the connection of the machine to societal control. Marez conveys an example of this by highlighting the creation and innovation of tractors by manufacturers such as the International Harvester Company for the sole purpose of eliminating workers. These technologies were all designed with the “futuristic look” commonly associated with 1950s modernist tastes.¹⁶ A more modern example of this in the tech industry relies on contract workers to clean the halls of corporations such as Apple. Here, the machine’s task of decentralizing industry is already at work. For example, “if the janitors who clean Apple’s buildings, for instance, lose their jobs because Apple changes janitorial contractors, workers have no right to picket Apple itself.” This creates an environment where contractors drive down wages to get contracts with these companies. Thus, eliminating and reinforcing structures that impede the ability to organize unions.

¹⁵ Gilles Deleuze, “Postscript on the Societies of Control*,” *L'Autre Journal* 1 (May 1990), <https://doi.org/10.4324/9781315242002-3>. pp.6

¹⁶ See page 12 Figure 2

In order to show how these contexts appear in Silicon Valley today I will be focusing on different factors of the structure of Silicon Valley in the past half a century and compare them to science fiction works that draw from the previous agricultural history of the Valley and the broader concepts of capitalism as a whole. This is done in order to comprehend the so-called “new age” of post-industrial capitalism that the Valley leads the way in.

I start off first by an analysis in the first chapter of what structures remained the same in the Valley and which ones changed through various transitions of industry. The first chapter also covers the grassroots movements on both sides of the political spectrum. Diffusion of grassroots movements are captured in the works of science fiction creators such as George Lucas, who ties together themes from both sides that lead to the creation of themes that fit a broad array of narratives. The one that will concern us is neoliberalism, since the Valley’s specific brand of it is said to have traced back to the diffusion of these various political movements. This chapter will also bring up the racialized structure of this system that would rely on Mexicans, Mexican Americans, as well as other new immigrants to the Valley later on in its history. Subsequently, this is something that *Sleep Dealers* can be drawn upon for, given that the film provides us with a narrative for the labor relations between the United States and Mexico. Moreover, despite the film showing these labor relations in the agriculture industry, it will aid the reader in seeing how the specific form of labor was translated over into the technology industry.

The second chapter focuses on Octavia Butler as a writer, mainly due to her archive at the Huntington Library. Marez points out that there is a collection of Butler’s papers at the Huntington Library that suggest Butler closely followed news about Mexican farm workers, as

well as the white nationalist backlash of the 1980s.¹⁷ Butler also followed much of the environmental impacts occurring in the area as a result of semiconductor production, as well as pesticides from the agriculture industry. These examples just scrape the surface of the array of interdisciplinary issues Butler kept track of in the Valley spanning between the 1970s and 1980s. Additionally, a reader of Butler's *Parable of the Sower* would easily be able to view how these issues influence the dystopian future Butler builds through her writing. Furthermore, because of the existence of the archives Butler provides us a grounding for utilizing science fiction works to enhance our understanding of capitalism, the Valley, and its structures.

In the final chapter, I assess two different infrastructures. The first, is Silicon Valley's physical infrastructure including industrial systems that have been used both by the agriculture industry, the semiconductor industry, and in the present-day Valley. The second, is the infrastructure of the internet, which seemingly separates itself from the reliance on physical infrastructure that previous industries have. However, through the work of Isaac Asimov's *Foundation* I intend to bring out the themes that make the same replication of labor relied upon by previous industries prevalent in the age of the internet instead. In addition, this chapter also debunks the myth that the "post-industrial" society is separated from the impacts they cause on the environment.

The common thread I hope to achieve through all of these chapters is a weaving together of the impacts that labor, capitalism, race, and the environment within Silicon Valley that can be understood through the lens of science fiction. Ultimately, the reader of this paper should

¹⁷ Curtis Marez , "Octavia E. Butler, After the Chicana Movement ," Digital Object Identifier System (University of California, San Diego , 2018), <https://doi.org/10.1080/00497878.2018.1518621>.

hopefully finish with an understanding that the structure of the past is present in our futures, and in the fictional futures of their favorite science fiction creator.

Photo References for this Chapter:



Figure 1: Image from Sleep Dealers

Ramirez, Jessie. "Sleep Dealer, or, Tijuana, Ciudad Del Futuro." Jesse Ramirez. wordpress.com, August 16, 2019. <https://jessieramirez.com/portfolio/sleep-dealer-or-tijuana-ciudad-del-futuro/>.



Figure 2: International Harvester Company 1960 Tractor

Prekindfarmer. "1960 Farmall 140 Pulker." Yesterday's Tractors. Yesterday's Tractor Co., October 22, 2013. <https://www.yesterdaystractors.com/cgi-bin/viewit.cgi?bd=pulling&th=188137>.



Figure 3: Royal Chicano Air Force

KVIEvideo. "Viewfinder: Royal Chicano Air Force – Art and Activism." YouTube. YouTube, September 16, 2021. <https://www.youtube.com/watch?v=BWYyYfyfRK4>.

Chapter 1: A Historical Overview of the Structures within Silicon Valley

In order to understand how the ideas of science fiction are deeply ingrained in Silicon Valley's structure, we must first understand the structure and geography of Silicon Valley itself. Both the physical and political structure of the Valley are essential to understanding the type of labor that is replicated throughout the history of the Valley, no matter what the industry. Namely the shift in demographics, professions, and zoning that occurs between the 1950s through the 1980s. During the late 1990s and early 2000s, "Silicon Valley has been characterized as a highly decentralized industrial system integrated by a variety of informal and formal networks, cooperative practices, and institutions that ensure a shared technical culture and fluid diffusion of technological knowledge upon which the success of the region's economy depends."¹⁸ Subsequently, what we see through this reorganization is it was influenced through the post-war technology industry shift to the private sector, it was also arguably influenced by earlier attempts to control labor movements and organizations of the Valley's oldest residents, the Latinx working class. What does not change in the Valley over history is the given industry's need to suppress labor movements within this group. Thus, the primary objective for this chapter is the understanding of how this transitional phase between the 1950s and 1980s plays into what tech CEOs choose to cherry-pick out of science fiction to support the further growth of the tech industry.

Starting in the 1950s there was a transition away from agriculture in Santa Clara County and a shift towards the electronics industry in the wake of World War II. During this same

¹⁸ Christian Zolniski, "Janitors, Street Vendors, and Activists: The Lives of Mexican Immigrants in Silicon Valley," in *Janitors, Street Vendors, and Activists: The Lives of Mexican Immigrants in Silicon Valley* (Berkeley, CA: Univ. of California Press, 2008), pp. 28-28.

decade we view the rise of organizations such as the Community Service Organization that would assist and the needs of Mexican and Mexican American cannery workers and residents in towns such as Sal Si Puedes (translated: get out if you can).¹⁹ Additionally, we view the growth of a new professional middle class coming into the area to fill the new jobs offered by the tech industry. Between 1950 and 1960 the population of Santa Clara County went from 290,547 to 658,700. Many of these new professionals at this time shared a conservative worldview²⁰ that through the coming decades would be shaped into libertarianism, and later the general views that govern Silicon Valley labor relations presently. These worldviews would clash with both the labor movements on the left lead by Chavez and the UFW, and the counterculture forming at the time. Subsequently, this was the Valley that influenced science fiction writers at the time such as George Lucas.

The 1960s is a key point in the transition of the Valley from agriculture to technology. Remember, the “deskilling” of agriculture jobs that was discussed in the introduction? This provided a workforce that was perfect for the low wage sector of technology. The labor force that was once in fields and canneries operating “the machines of the future” in agriculture, fit the need for the “...thousands of jobs in unskilled, low-wage occupations in electronics assembly and the service sector that became a magnet for Mexican immigrants.”²¹ Consequently, they were pulling from a labor force already affected by the suppression of labor movements through technology. Given this information, it is important to remember Curtis Marez’s argument;

¹⁹ Christian Zolniski, “Janitors, Street Vendors, and Activists: The Lives of Mexican Immigrants in Silicon Valley,” in *Janitors, Street Vendors, and Activists: The Lives of Mexican Immigrants in Silicon Valley* (Berkeley, CA: Univ. of California Press, 2008), pp.24.

²⁰ Lisa McGirr, “Chapter 4: The Conservative Worldview,” in *Suburban Warriors* (Princeton, NJ: Princeton University Press, 2001), pp. 147-186.

²¹ Christian Zolniski, “Janitors, Street Vendors, and Activists: The Lives of Mexican Immigrants in Silicon Valley,” in *Janitors, Street Vendors, and Activists: The Lives of Mexican Immigrants in Silicon Valley* (Berkeley, CA: Univ. of California Press, 2008), pp.26.

“science fiction centers agriculture in part because California’s agricultural economy has been so important to visions of the future in the nation and the world.”²²

However, I would take Marez’s argument a step further to say that agribusiness and science fiction shaped the geography, and political environment of Silicon Valley itself through this transition of economies. This argument is evident when local officials created an urban redevelopment plan in the 1970s. The plan included the typical new roads, malls, office buildings, hotels, and other facilities, but the project set in motion the destruction of some of the oldest Mexican neighborhoods including Sal Si Puedes.²³ Other than the implication of displacement of families from these neighborhoods, redevelopment also influenced how information was shared, and the ability for these neighborhoods to organize. Moreover, the decentralization that took place as a result of these renewal projects both in zoning and the more literal destruction of communities essentially could be seen as to achieve the same purpose of technology in agriculture that made it more difficult to organize.

Another key aspect of the 1960s that is at play in shaping the political geography of Silicon Valley is the interplay between grassroots activists on both sides of the political spectrum. Chavez got his start in community organizing in San José between the 1950s and early 1960s going on afterward to become a key player in the Delano Grape strike. At the same time, a lesser-known conservative grassroots movement is occurring a few hours south of Silicon Valley. Notably this movement gave rise to conservatives such as Ronald Regan. However, the

²² Marez, Curtis. “Farm Workers in the Machine .” Introduction. In *Farm Worker Futurism: Speculative Technologies of Resistance*, 1–2. Minneapolis, MN: University of Minnesota Press, 2016. pp37

²³ Christian Zolniski, “Janitors, Street Vendors, and Activists: The Lives of Mexican Immigrants in Silicon Valley,” in *Janitors, Street Vendors, and Activists: The Lives of Mexican Immigrants in Silicon Valley* (Berkeley, CA: Univ. of California Press, 2008), pp.27.

most important view that this group held in regard to this discussion is “...they shared a belief that the tendency toward liberal ‘collectivism’ undermined moral principles and what they perceived moral truths.”²⁴ What will become so important about these new grassroots movements is not only the direct effect they had on shaping the landscape of Silicon Valley itself, but also the diffusion of ideals held by the varying socioeconomic groups living in the Valley into pop culture itself. Curtis Marez states that this is essentially the case for *Star Wars*; “...Lucas’s work suggests that the Central Valley has been a key experimental laboratory for the development of forms of neoliberalism in which individual white market freedoms are engendered in opposition to racialized farm workers.”²⁵ As such, Lucas’s works comprehend a key element that is needed to uphold Silicon Valley structures, as industries in the Valley have changed over time. This being the need for a categorization, and thus differentiation in the evermore decentralized system needed to maintain steady labor for industries viewed as central to further development.

Moving onto the 1980s and 1990s many of the electronics manufacturing jobs were moved offshore. This was also the era when subcontracts became a massive resource to Silicon Valley employment. Christian Zolniski asserts that, “the first factor at the heart of the political economy of Silicon Valley is the continuous demand for labor flexibility.”²⁶ In order to have this flexibility to keep up with the Valley’s now established image of the place that leads technological innovation, subcontracting now allowed companies to hire workers from outside

²⁴ Lisa McGirr, “Chapter 4: The Conservative Worldview,” in *Suburban Warriors* (Princeton, NJ: Princeton University Press, 2001), pp. 152

²⁵ Marez, Curtis. “Farm Workers in the Machine.” Chapter 3: Farm Worker Futurisms in Speculative Culture. In *Farm Worker Futurism: Speculative Technologies of Resistance*, 1–2. Minneapolis, MN: University of Minnesota Press, 2016. pp119

²⁶ Christian Zolniski, “Chapter 1: Mexican Immigrants in Silicon Valley,” in *Janitors, Street Vendors, and Activists: The Lives of Mexican Immigrants in Silicon Valley* (Berkeley, CA: Univ. of California Press, 2008), pp.29.

firms. Thus, completely changing labor relations between employer and employee.

Subcontracting can also be argued to uphold the “decentralized” neoliberal utopia that Silicon Valley markets itself to be. Consequently, this process also continued the years-long process of continuing to erode the ability to organize in the Valley.

Though subcontracting could be chalked up to an effect of the broader neoliberal views that were growing in the 1990s it is important to remember two key factors about Silicon Valley. The first is quite simple, (and is hopefully highlighted in the above paragraphs), this is the fact that Silicon Valley, due to both conservative and leftist grassroots movements, created a mixture of ideas that would eventually become a form of neoliberalism itself through its interpretation in popular culture (namely science fiction). The second is that subcontracting could be viewed as part of a broader resistance to worker’s rights by some businesses in the Valley. Subcontracting was also used as a means to save money by businesses both through the supply of even cheaper labor, but also through their limited liability to those subcontracted workers. Drawing back to the ideas of farm worker futurism, and the fictional farm worker bots in *Sleep Dealer*, we can view that the constant for any industry within California is a need for a cheap, flexible, and constant labor supply. This has not changed since the Valley was first industrialized. The main way that California has progressed (and thus moved into the future), is through the dependence on a flexible labor supply that is made ever more flexible through a degrading of organizational abilities, since large technology companies are not held liable for subcontracted workers; these workers cannot organize directly against these large companies. Subsequently, subcontracting is just another example of an attempt to maintain, and control that labor supply. Furthermore, the recognition of this need to control the steady supply of labor in the work *Sleep Dealer* takes on another form, one in which workers operate robots from across the Mexican border for

American agriculture companies. Thus, exposing this element of control as essential to industry development in the Valley.

Additionally, this system would not be able to be upheld if it were not for the racialized aspect of Silicon Valley politics. Even after the massive urban renewal project in the 1970s San José was heavily segregated. This segregation “... mirrors the economic and social inequality of the region.”²⁷ Moreover, the segregation in the Valley could be inferred to be upheld by its pasts in agriculture (if not its entire colonial history). Mexicans and Mexican Americans have been a steady flow of low income labor for the Valley regardless of industry. Thus, although Silicon Valley is viewed as a generally progressive place, it is in fact built on the back of a racist history that it continues to utilize today to satisfy the needs of its existence.

In Zolniski’s analysis of the Silicon Valley town Santech that includes census data from 2000, “regardless of their place of origin, educational background, labor experience, and immigrant status, most Mexican immigrants in Santech are employed in low-skilled jobs in Silicon Valley.”²⁸ Since this is the case, it can be implied that the lack of upward mobility within towns in Silicon Valley like Santech has little to do with skill sets present within these communities, but rather with the need within the technology industry for flexible cheap labor. Moreover, the structure of racial segregation of Mexican and Mexican American communities such as Santech within the Valley that largely reflect socioeconomic standing provide the flexible labor force needed to drive progress. Thus, in the words of Zolniski, “...the transition to

²⁷ Christian Zolniski, “Chapter 1: Mexican Immigrants in Silicon Valley,” in *Janitors, Street Vendors, and Activists: The Lives of Mexican Immigrants in Silicon Valley* (Berkeley, CA: Univ. of California Press, 2008), pp.29.

²⁸ Christian Zolniski, “Chapter 1: Mexican Immigrants in Silicon Valley” in *Janitors, Street Vendors, and Activists: The Lives of Mexican Immigrants in Silicon Valley* (Berkeley, CA: Univ. of California Press, 2008), pp.38.

a high-tech industrial economy did not break, but rather accelerated the demand for Mexican immigrant labor, opening up new economic opportunities for recent immigrants.”

Activism within Mexican and Mexican American communities in the 1990s and 2000s after this transition to the high-tech industry that we know today largely reflect organizations from the past aiding agricultural communities. A non-profit local organization People Acting in Community Together, operated much like the Community Service Organization acted providing mutual aid to communities.²⁹ Organizations like this one as well as ones associated with local government as well as grassroots organizations that were run by women are a constant aid to Mexican and Mexican American communities in Santa Clara County. These organizations are largely run by those within the community and address an array of needs.

In chapter one of his book Christian Zolniski concludes that “...Santech is not a ‘silicon ghetto’ of Third World immigrants with little education disconnected from Silicon Valley’s economy, but is the result of a dramatic transformation of the Santa Clara Valley from agricultural center to high-tech industrial center.” However, I would take this argument a bit further to say that the result of this transformation was not just the transition of the Valley from agricultural to high-tech industrial but was rather an effect of attempting to keep a present low skill labor force there in the name of progress. Moreover, this reflects earlier attempts of agribusiness in the 1950s to use technology to “deskill” the labor force and prevent them from organizing. Additional efforts persisted to form unions in the janitorial industry that provided most of the jobs that Mexican immigrant workers worked in the Valley. However, as will be

²⁹ Christian Zolniski, “Chapter 1: Mexican Immigrants in Silicon Valley” in *Janitors, Street Vendors, and Activists: The Lives of Mexican Immigrants in Silicon Valley* (Berkeley, CA: Univ. of California Press, 2008), pp.43.

discussed in the next paragraph these efforts were thwarted after the initial success of Local 1877 in the area. Largely as a result of the decentralized nature of the Valley, and the lack of liability tied to the high-tech companies in relation to subcontracted employees.

Even more important to remember still is that “progress” no matter the case with agribusiness or with the new high-tech economy holds the angle of space age futurism dear, while artists, activists, and proletariat workers in the Valley view this space age as a dystopia nearby.³⁰ After a successful fight of Bay-Clean janitorial workers to join a Union (Local 1877) under contract management in Silicon Valley. Workers were still largely involved in this union after their contractor changed to Service International. Two principles ingrained in the structures of Silicon Valley that point to the minimal success of this union in the area. The first, which Ziloniski points out, is that the janitors’ grievances were directly against the subcontract companies themselves. Thus, alleviating any of the blame from the large tech firms that hired the help of these subcontracting agencies. The second is the idea of Scientific Management which is used by subcontracting agencies to meet the demands of their clients in Silicon Valley’s office spaces. Scientific management at its core simply makes a workforce more efficient by utilizing methods present in science such as observation, experimentation, and analysis.³¹ However, within the subcontracted janitorial industry, it also led to a reduction in the workforce, and heavier labor demands. Additionally, “the use of scientific management techniques with immigrant workers in technologically advanced industries has been considered a characteristic

³⁰ Christian Ziloniski, “Chapter 2: The Subcontracting of Mexican Janitors” in *Janitors, Street Vendors, and Activists: The Lives of Mexican Immigrants in Silicon Valley* (Berkeley, CA: Univ. of California Press, 2008), pp.62.

³¹ “Scientific Management Theory Explained,” Villanovau.com (Villanova University, September 9, 2022), <https://www.villanovau.com/resources/leadership/scientific-management-theory-explained/>.

of the flexible specialization model of the new economy.”³² Furthermore, both of these strategies could be viewed as more recent efforts to decentralize as a means of efficiency, and a specific vision of progress.

What specific vision of progress tethered to the progress of Silicon Valley? This question will be revisited throughout this project. However, the most basic facet of understanding the “Silicon Valley” interpretation of progress is to consider tech CEOs’ visions of the future which many consistently reference science fiction works. “The lesson I drew from [the “Foundation” saga] is you should try to take the set of actions that are likely to prolong civilization, minimize the probability of a dark age and reduce the length of a dark age if there is one” Elon Musk is quoted telling Rolling Stone in an interview.³³ For context, *Foundation* is a science fiction trilogy by Isaac Asimov that chronicles the fall of an old galactic empire and the formation of a new one. The three books chronicle conquests in the galaxy where various groups conquer various parts of the old galactic empire. This is occurring while a group of scientists at either end of the galaxy keep the histories of the old empire, as well as await the words of Seldon (who predicted the entirety of downfalls and conquests with science) who appears as a holograph every few hundred years. The story goes that if they follow Seldon’s advice they will shorten the length of the dark age the majority of the trilogy takes place in.

What is so unique about citing works like *Foundation* specifically is that they follow a very specific capitalist narrative that tells us just as much about the past as it does the future. At

³² Christian Zolniski, “Chapter 2: The Subcontracting of Mexican Janitors” in *Janitors, Street Vendors, and Activists: The Lives of Mexican Immigrants in Silicon Valley* (Berkeley, CA: Univ. of California Press, 2008), pp.62.

³³ Neil Strauss, “Elon Musk: The Architect of Tomorrow,” Rolling Stone (Rolling Stone, July 29, 2020), <https://www.rollingstone.com/culture/culture-features/elon-musk-the-architect-of-tomorrow-120850/>.

the very beginning of *Foundation*, we view the downfall of a central planet that is entirely urbanized at the center of the galactic empire. This planet relied entirely on planets under its control to acquire resources. While this is not unlike some colonial societies, I would also argue that the decentralization of Silicon Valley, its reliance on overseas production, and most importantly its reliance on subcontracted labor also reflects this “Asmovian” vision of a failing galactic empire (or in our case Earth-based capitalist society).

Nonetheless, CEOs like Musk (who has since moved past his Silicon Valley days) view themselves as the galactic heroes of Asimov’s novels. Subsequently, Asimov’s portrayal of the years of unrest and the dark ages utilizes the colonial undertones of conquest. Additionally, Asimov’s centering of one guy, “Hari Seldon,” predicting the entire downfall of an empire with science can be viewed as a portrayal of the ability of one person to impose their vision on the entirety of society for the better. Moreover, this implication is paired with the fact that shortening of a historical dark age could be possible simply with mathematical efficiency. Thus, the basic understanding of how science fiction could be used to understand this facet of Silicon Valley history is through what it says about its structures, and moving forward how CEOs connect the “science fiction world” to the real one.

Chapter 2: Octavia Butler, and the realization of the connections between labor, race, and the environment in Science Fiction

Born June 22nd, 1947, in Pasadena California, Octavia Butler would eventually become one of the science fiction writers to create their own universe from the fertile California soil.³⁴ The writings crafted by Butler stand out from many of the other contemporaries of her era because she centers the voices of people of color, and those who identify as LGBTQ. It is known that works like Butler's *Parable of the Sower* are based on a possible dystopic future in California. In *Parable*, Butler does not shy away from showing how the current and historical racial dynamics in California play out in the violent future of the novel. This stands in stark contrast to the science fiction universes created by George Lucas that tend to appeal to white individualism and free market that have their roots in California agribusiness.³⁵ On the contrary, Butler's *Parable*, as well as her other works provide us science fiction universes that are products of California's past and current race and class structures, as well as critiques of the environmental unsustainability that arise as direct and indirect effects of this system.

Butler's works become even more intriguing when considering her archival collection at the Huntington Library. Over recent years scholars have been intrigued by how, as Ayana Jamieson and Michelle Bailey put it, "Butler's life, writing, and research nurture a deeper understanding of the past, present, and possible futures."³⁶ These archives give us the insight that Butler closely followed journalism about anti-Mexican white nationalism, and migrant farm

³⁴ "About," OEB legacy (Octavia Butler Legacy), accessed March 1, 2023, <http://octaviabutlerlegacy.com/>.

³⁵ Marez, Curtis. "Farm Workers in the Machine ."Chapter 3: Farm Worker Futurisms in Speculative Culture. In *Farm Worker Futurism: Speculative Technologies of Resistance*, 1–2. Minneapolis, MN: University of Minnesota Press, 2016. pp119

³⁶ Ayana Jamieson and Michelle Bailey, "Mining the Archive of Octavia E. Butler," The Huntington (Verso, June 11, 2017), <https://huntington.org/verso/mining-archive-octavia-e-butler>.

workers. According to Marez, for example, “she saved a 1983 series of stories in the Los Angeles Times called ‘The Latinos’ that prominently featured reports on the exploitation of farm workers and, more broadly, the turning back of the civil rights clock for brown people under Reagan.”³⁷ Additionally, this archive also gives us the insight that Butler collected articles throughout the 1980s on climate change and the environment.³⁸ Moreover, these collections give us the understanding that Butler is not just giving us a science fiction universe in works like *Parable of the Sower* influenced by the general political “zeitgeist” of an era; rather one based on an in-depth historical critique through use of theoretical futures that narrate the consequences of racial and class-based hierarchies, and their unsustainable nature. The collection at the Huntington Library gives us further insight into Butler’s close analysis of California’s politics, labor movements, and environmental issues. As I argue throughout this chapter, Butler’s ability to grant us insights into the intersections of these topics are largely backed up by the evidence present in the Huntington Library collection. Much work has been done to understand Butler’s work through these archives. Much of this work is guided by interpretations of Butler’s work that came out of the conference, “titled “Octavia E. Butler Studies: Convergence of an Expanding Field,” [which] highlights the evolving, transdisciplinary work that scholars have done based on Butler’s archives.”³⁹ This chapter also utilizes the primary sources from the archive referenced in these sources to understand the intersections of climate, race, and labor in California both in Butler’s science fiction works, and as applied to the workings of Silicon Valley. Subsequently, as I argue in the later chapters of this project, these intersections will be essential to understanding not only what is lacking in Silicon Valley’s visions of the future, but

³⁷ Curtis Marez , “Octavia E. Butler, After the Chicana Movement ,” Digital Object Identifier System (University of California, San Diego , 2018), <https://doi.org/10.1080/00497878.2018.1518621>.

³⁸ See Figure 4 on page 32

³⁹ Ayana Jamieson and Michelle Bailey , “Mining the Archive of Octavia E. Butler,” The Huntington (Verso , June 22, 2017), <https://huntington.org/verso/mining-archive-octavia-e-butler>.

also identifying what must be taken into consideration when leveraging both labor and environmental organizing under Silicon Valley's current structure.

Octavia Butler's works, as well as the primary source evidence kept in the Huntington archive additionally suggests that Butler was aware of the ways in which California's unique form of conservatism gave rise to Reaganism, and the subsequent racism that was connected to it⁴⁰. Additionally, as mentioned in the paragraph above, white-conservative support of Reagan could be viewed in some respects to have a specifically anti-Mexican angle. Marez cites a bumper sticker from the collection at the Huntington Library that reads, "Illegal Aliens Go Home!" He adds that, "as the bumper sticker suggests, Butler also followed the resurgence of organized white supremacy under Regan, and, in particular, its anti Mexican face." (reference) Furthermore, Marez argues in his paper "Octavia E. Butler, After the Chicanx Movement," "...that Butler's life, writing, and personal papers at the Huntington remind us of the long history of Mexican activism, and anti-Mexican racism that anticipates our contemporary white nationalist context." Moreover, this chapter hopes to achieve the additional evidence needed to attach this to the environment, organizing, and the modern Silicon Valley structure, as discussed in the previous chapter.

To achieve this, this chapter will use Butler's *Parable of the Sower*. The novel which was published in 1993 follows the main character Lauren through the destruction of her gated community, and the killing of most of her family by outsiders. Taking place in a near future in California destroyed by climate disaster, wealth disparities, and crime, the way things ended up

⁴⁰ Curtis Marez , "Octavia E. Butler, After the Chicanx Movement ," Digital Object Identifier System (University of California, San Diego , 2018), <https://doi.org/10.1080/00497878.2018.1518621>.

is not separate from the structures California holds currently, and in its history. This is omnipresent in the various ways in which people survive the dystopian realm in which they dwell. Traces of contract labor, structural racism, environmental degradation, paired with an even more staunch individualism (now needed to survive) are all things that seem to play into the structure that arose in *Parable's* society.

In the opening of the novel, we are greeted with an explanation of the community that Lauren lives in. The community consists of several families including Lauren's, the gated community was formed by the families, to provide mutual protection from what was beyond the gates. The people living within this community are "luckier than most" living outside its walls and are viewed as a bit wealthier than most. There are communities like the one that Lauren lived within in California. Moreover, though Lauren's community was racially mixed, it is mentioned in the novel that this was not often the case. Subsequently, when looking back to discussions about how neighborhoods within California were rather intentional in their structural segregation of both class and race both before and after Silicon Valley's restructuring, it is quite easy to view this element of California's history reflected in Butler's visions of the future in *Parable*. Rather than this being something taken from a past that has been reconciled, in the novel it is suggested that this is the product of current as well as historical structures that have seem to hit a critical breaking point in their overall sustainability of maintaining the system that they arose from.

Once Lauren is forced to leave her community due to its destruction, she starts to make allies on the road. Emery Tanaka Solis, and her infant daughter are part of this group. The character Emery escapes from a farm owned by an agribusiness conglomerate. Once this

conglomerate was sold the workers fell into new hands that forced them to work longer hours for less pay.⁴¹ This is very similar to forms of contract labor that became very important to Silicon Valley in order to maintain a “flexible labor force.” Butler’s connection of this system to agribusiness, however, is especially revealing considering that the technology industry adopted many of their labor practices from the agribusiness sector that directly preceded them in the Valley. Moreover, we know that Butler closely followed the historical events occurring as this transition was happening. The “debt slavery” that was suggested as a result of the switching of agribusiness conglomerates highlights the real-world issue of lack of upward mobility no matter the skill set faced by Mexican laborers in present-day as a result of Silicon Valley’s need for a consistent “flexible” workforce. Thus, one can again view the structural issues present in *Parable*, as quite frankly inseparable from the structure of California currently.

Subsequently, in *Parable* the breakdown of societal and economic structure that occurs in California is paired with environmental disaster. Water shortages in the book act as a catalyst to the disorder that occurs. Though *Parable* was written in 1993, the water shortages seem eerily similar to today’s situation in California. In the past few years, wildfires have scorched landscapes, and drought has accelerated the drying of lakes in the state, giving rise to a number of environmental issues.⁴² Although our current situation has not reached the point of complete societal breakdown, it is at this juncture that Butler reveals to us a crucial intersection between societal and economic structures and the environment. In the novel, water is commodified as a

⁴¹ Curtis Marez, “Octavia E. Butler, After the Chicana Movement,” Digital Object Identifier System (University of California, San Diego, 2018), <https://doi.org/10.1080/00497878.2018.1518621>.

⁴² Biddle, T, R Chakraborty, Q Li, M Maltz, J Gerrard, and D Lo. “The Drying Salton Sea and Asthma: A Perspective on a ‘Natural’ Disaster.” California Agriculture. University of California, Agriculture and Natural Resources, April 22, 2022. <https://calag.ucanr.edu/archive/?article=ca.2022a0003>.

result of drought, meaning that the essential source of life is only available if you can find a means to acquire it either through labor, money, trading, or violence. However, there is still a clearly defined hierarchical system that upholds who is relatively “secure” in this society. Butler gives us the example of Lauren’s and her family’s community before it was destroyed, which was one of many decentralized islands in suburbia that relied on individuals in the community for its protection. When thinking about how much of California’s infrastructure is built to separate different communities with clear boundaries, one could easily view how Lauren’s community was a product of the way in which this infrastructure and the community borne out of it was stressed into the formation viewed in *Parable*. Additionally, there is an international corporation called the KSF that purchases municipalities in California with the caveat that the community was primarily upper middle class and white (conditions that make the place economically viable to the company). In exchange the company, “was looking for registered nurses, credentialed teachers, and a few other skilled professionals who would be willing to move to Olivar [a town] and work for room and board.”⁴³ However, our protagonist Lauren points out that these companies sought to put people in a form of “debt slavery” by offering protection and paying next to nothing. This example reflects not only the economic valuation of a neighborhood based on race and class, but also an extension of the system of debt slavery to an upper middle-class area due to stressed conditions on the environment. Lauren’s dad remarks about this fact after one of his sons doubts that the upper middle class could fall victim to debt slavery saying, “when I was young, people said it would come to this. Well, why shouldn’t other

⁴³ Octavia E. Butler, “Chapter 11,” in *Parable of the Sower* (New York, NY: Grand Central Publishing, 2020), pp. 120

countries buy what's left of us if we put it up for sale. I wonder how many people in Olivar have any idea what they're doing.”⁴⁴

What we can view through the above instances in *Parable* is a very clear intersection between the race and class structures as tied to the economy, and the environment. These examples mirror California's labor history, and thus serve as a critique to its structures based on author interpretation and experience alone like many other contemporary science fiction writers. However, given the archival evidence that is in the Huntington collection, I argue that Butler, but also gives us permission to look upon her work as a critique based in California's history, not just her lived experience of the history. The archival collection at Huntington provides a wide array of sources Butler looked at that ranged anywhere from scientific papers, news stories, and newsletters regarding the happenings of California. Moreover, following the “paper trail” of what little I could access publicly from the archive, and others' interpretation and reading of the archive as part of the 2008 conference regarding this collection, it seems that the sources in this archive provide substantial evidence regarding the intersections of race, class, and environment in California when analyzed beside *Parable*.

Another important aspect Butler provided with both the archive, and her fictional writings is an assessment of these intersections pre-2000 (which is a rarity at least as far as I have found). *Parable* was originally published in 1993 is particularly unique because in some ways it reflects and predicts the situations brought about by California's current droughts. Take Salton Sea, a lake that started drying up in the 1980s. This was once a popular vacation spot,

⁴⁴ Octavia E. Butler, “Chapter 11,” in *Parable of the Sower* (New York, NY: Grand Central Publishing, 2020), pp. 121.

however, the wealthier residents that owned vacation homes there, as well as businesses have since moved out leaving a ghost town along its coast. As the lake dries up more, and more and is accelerated by droughts, toxic dust that once was at the floor of Salton Sea. Poorer minority communities are the first to face the environmental harm from this with asthma rates amongst children there being twice as high as the rest of the state.⁴⁵ In this instance Salton Sea drying up was mostly because of anthropogenic activity, and drought caused by climate change. Consequently, if nothing is done to stop the toxic dust blowing from the lakebed, the pollution will end up affecting larger populations in California, such as people living in greater Southern California. This example is important because it is something that Butler would not have looked at, since it occurred after the time of the papers in her archive were dated (most from 1960s-80s). Moreover, because of the structures already present and noted by Butler in California, the Salton Sea provides a perfect microcosm of the dynamics seen in other regions in California, and the world.

Extending past this one instance of environmental degradation, further stressing structures in California, we also can use Butler's work to analyze the way in which labor and organizing is used in the structures within Silicon Valley. As I argued in the previous chapter, many of the models used to extract labor from workers in the Valley were adopted from methods tied to agribusiness futurism in the mid-twentieth century, also important to remember is how this hindered workers ability to organize in a way in which is effective. Subsequently, reliance on organizing that occurs in Silicon Valley seems to need to garner support through stressing the environmental harms. For example, in the early 1980s the UE Electronics Organizing

⁴⁵ T Biddle et al., "The Drying Salton Sea and Asthma: A Perspective on a 'Natural' Disaster," California Agriculture (University of California, Agriculture and Natural Resources, April 22, 2022), <https://calag.ucanr.edu/archive/?article=ca.2022a0003>.

Committee seemed to stress in their public hearings “racism and firings in plants, and campaigned to expose the danger of working with numerous toxic chemicals.”⁴⁶ Here we see that organizing leverage comes from the pressure point of environmental harm, and through this exposes the segregated conditions, and the disproportionate harm occurring to minority workers due to toxic chemical exposure. Moreover, what we view here is a key connection between the intersections of race, class, and the environment. Adding to this, subcontracting companies would compete to sell their services (or more simply the labor of their employees) for the lowest price to companies like Apple. This seems eerily similar to Butler’s fictional KSF buying up towns to move people to extract their labor in *Parable*. Moreover, what Butler can be used to analyze in this very real system of Silicon Valley subcontracting, and the lack of ability to organize does is further stress environmental harm, as harm to bodies is done through exploitation in relation to decentralization.

Furthermore, Butler’s work takes into account historical events in her work to influence what is going on in the world of her books. By contrast to someone like George Lucas, who is pulling on simply personal experience of a given political zeitgeist, Butler collected and did extensive research as evident by her archive. Thus, works like *Parable* can stand just as much as a historical analysis, as it can be for a prediction of the future based on the current structures present in society. Much of the archival evidence left by Butler is also specific to California giving extra grounds for analysis. With the archive being widely recognized at present for the contributions it holds to multidisciplinary studies that specifically revolve around California. Furthermore, this is precisely what makes Butler’s writings important when using other science

⁴⁶ Bacon, David. “Organizing Silicon Valley’s High Tech Workers .” dbacon.igc.org. Accessed December 1, 2022. <http://dbacon.igc.org/Unions/04hitec0.htm>.

fiction works that lack this amount of historical grounding to further analyze Silicon Valley histories in connection to the broader history of capitalism.

Photo References for this Chapter:

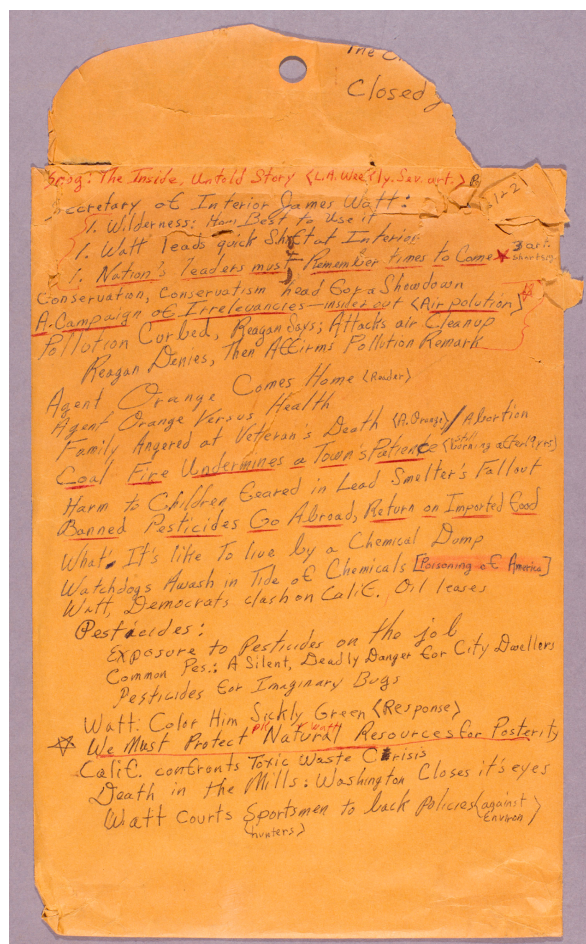


Figure 4: Folder Owned by Octavia Butler Used to File articles about the Climate and Environment in Huntington Library Collection

*File That Octavia Butler Used to File Articles about the Climate and Environment .
Huntington.org. The Huntington Library, Art Collections, and Botanical Gardens , June 22,
2017. https://huntington.org/sites/default/files/uploads/2017/06/OEBconference-2_LG.jpg.*

Chapter 3: Cyberspace and the Anthropocene

In this new age of technology Silicon Valley has contributed to something unique: moving much of our world online. Through the internet, we are connected to virtually anyone else with access to a computer, anywhere in the world. In an instant we travel through space close to the speed of light like we are on the Millennium Falcon, or rather our text reaching our friend across the world does. The way in which information travels on the internet seemingly without much use of resources instantaneously makes it easy to conceal both the labor it requires and environmental impact it has from view. Moreover, it conceals its reliance on previous infrastructure and societal structures imposed through previous industries.

In his paper, “The Environmental History of Computing,” Nathan Ensmenger makes the claim that, “the Information infrastructure of the twenty-first century is built around the bones of the nineteenth-century transportation and communication networks.”⁴⁷ This gets into the interesting theory that all networks for the expansion of the internet were constructed around previous networks of influence, and commerce. This becomes particularly important for the argument of this chapter when thinking about how films like *Sleep Dealers* are based both in this new technology driven world, but also show the invisibility of the workers that is rendered possible through this tech. Even more intriguing, is that this film highlights the two industries of agriculture, and technology which in real life, are the two industries that have relied on the geography and various systems in Santa Clara County in the past century. Additionally, as I have argued/discussed in Chapter One, Silicon Valley relies on a largely decentralized model both in

⁴⁷ Nathan Ensmenger, “The Environmental History of Computing,” *Technology and Culture* 59 (October 2018): pp. S7-S33, <https://doi.org/https://doi.org/10.1353/tech2018.0148>.

its physical geography, and more importantly its labor relations to achieve the growth of its current industry. Moreover, the information technology that made this possible, “does not so much eliminate as conceal the materiality of the so-called ‘new’ economy. It externalizes the costs and centralizes the benefits.”⁴⁸

“Cyberspace” seems to imply something that does not rely on the Anthropocene for its survival. Thus, it is particularly important to document the pollution it has caused at the epicenter of technology in Silicon Valley. With the Valley being at the center of this new economy based on cyberspace commerce, it is important to document that the technology economy still relies on old methods of resource extraction, and labor as the industries that predated it. “In the roughly 10 by 40-mile strip of land that comprises Santa Clara County, California, there are twenty-three superfund sites, most of them contaminated by the byproducts of semiconductor manufacturing, including such highly toxic chemicals as trichloroethylene, Freon, and PCBs.”⁴⁹ This pollution was carried by infrastructure laid down for the agriculture industry before it, which were also heavy polluters. Subsequently, in an age in which California has become very prone to drought, a data center requires several hundred thousand gallons of fresh water to run.

The key argument this chapter seeks to make is that, although cyberspace maintains its elusiveness by seemingly separating itself from the impacts of industry, its impacts on the Anthropocene can be analyzed through the microcosm of environmental and labor struggle that has been occurring in Silicon Valley that spans the mining, agriculture, and technology

⁴⁸ Nathan Ensmenger, “The Environmental History of Computing,” *Technology and Culture* 59 (October 2018): pp. S7-S33, <https://doi.org/https://doi.org/10.1353/tech2018.0148>.

⁴⁹ Nathan Ensmenger, “The Environmental History of Computing,” *Technology and Culture* 59 (October 2018): pp. S7-S33, <https://doi.org/https://doi.org/10.1353/tech2018.0148>.

industries' respective dominances in the Valley. Additionally, in doing this alongside an analysis of instances in science fiction works where the reliance on physical means, and resources were implied as a necessity for technologically advanced industry, I hope to show Silicon Valley's reliance on old infrastructures to progress in industry. What is key to this argument is understanding "the history of industrial capitalism, [as] recapitulated and transformed within the information economy."⁵⁰ Subsequently, we cannot see the information age or the post-industrial economy, as something that has moved past the practices of industrial capitalism. Given the above example of the use of old water infrastructure in California being used for the agriculture industry being used also in the semiconductor industry that preceded it shows this on a physical scale within Silicon Valley itself. Only the connections run even deeper than this, extending to labor practices which were transformed only in the type of labor lower wage employees would be performing in the Valley, while the need for this labor force, as well manual labor through the supply chain does not change from industrial capitalism. Despite this, "in much of the [non-fiction] literature on the information society, its defining characteristic is assumed to be its immateriality."⁵¹ Consequently, what this information society has done is not render the industry and physical infrastructure obsolete, but rather use the inherent decentralization of the internet in order to spread out the inputs needed to continue its existence.⁵² These inputs could come in the form of anything from subcontracting employees from outside firms, outsourcing production, and/or the amount of water used to cool a data farm amongst many other things. What this results

⁵⁰ Nathan Ensmenger and Rebecca Slayton, "Computing and the Environment: Introducing a Special Issue of Information & Culture," *Information & Culture: A Journal of History* 52, no. 3 (2017): pp. 298, <https://doi.org/10.1353/lac.2017.0011>.

⁵¹ Nathan Ensmenger and Rebecca Slayton, "Computing and the Environment: Introducing a Special Issue of Information & Culture," *Information & Culture: A Journal of History* 52, no. 3 (2017): pp. 295 <https://doi.org/10.1353/lac.2017.0011>.

⁵² Crawford, Kate, and Vladan Joler. *Anatomy of an A.I. System*. January 25, 2023.

in is a huge supply chain with inputs coming from everywhere around the globe, something that is inarguably a result of being able to communicate faster in this information society.

The transformation of the industrial economy into something that seems to resemble an information economy in regard to the way in which it constructs itself for more efficient extraction of labor reflects much of Marx's ideas on the transition from physical labor to machine labor for workers in factories.⁵³ The technology of the machine "takes the form primarily of a distribution of workers among specialized machines, and of quantities of workers, who do not however form organized groups, among the various departments of the factory, in each of which they work at a number of similar machines placed together."⁵⁴ This form of labor, when exasperated, has detrimental effects on the worker's ability to organize for labor reform. Consequently, when we view examples such as the green, yellow, and red badge workers leaving Google in the video piece by Andrew Norman we view a furthering of technology separating workers which in the present-day companies seem to have codified in their labor practices.⁵⁵ Additionally, this process of machinery separating workers is viewed on the global scale of the technology industry in their contracts with other companies for extraction and production of materials overseas. With as much separation as we see in the current day however, there is the further consequence of it being hard to follow the entire chain of production and contributes to the elusiveness of the so-called information economy, and its dependence on older forms of industry.

⁵³ Marx, Karl. "Chapter 15: Machinery and Large-Scale Industry ." In *Kapital* 1, 1:492–508, 1867.

⁵⁴ Marx, Karl. "Chapter 15: Machinery and Large-Scale Industry ." In *Kapital* 1, 1:492–508, 1867.

⁵⁵ Andrew Norman , "Workers Leaving the Googleplex ," 2011, <http://www.andrewnormanwilson.com/WorkersGoogleplex.html>.

Science fiction works are evermore intriguing when considering ones that were released prior to Silicon Valley's prominence such as *Foundation* seem to show this inevitable progression of industry in not only of the separation of worker by machine, while also highlighting "the skill of the worker in handling it [the skill that comes with labor] over to the machine."⁵⁶ After the downfall of a centralized galactic empire, information of its history and progress are only kept amongst select individuals placed at either end of the galaxy. The rest of the galaxy is left with the technology, but not the knowledge of its history. This results in many things such as religions that attempt to explain and rationalize the tech, new powers coming to fill the vacuum, and those using the tech not for their own progression, but for the progression of their planet as guided by new rulers amongst other events. However, for our concerns, we will be focused on the last listed outcome of the example provided. In chapters eleven and twelve the protagonists are trying to acquire information about a power grid on a planet. The people in charge of running this grid on the planet are "tech men." These tech men know how to operate the computers that the entire planet is relying upon but are naive to the inner workings of the system itself.⁵⁷ Thus, they are separated from the "skill" of their task. One could argue that since *Foundation* is displaying a downfall of an empire this separation occurred from completely different means; however, this argument falls short in a few ways. The first is that *Foundation* is showing the downfall of a fictitious galactic empire at a scale that would be unfathomable to predict past the realm of a science fiction novel. What Asimov would have been able to draw upon since the novel was published in 1951 however, was the effects of machinery in the industrial economy, and the semi-recent downfall of European empires. Hence, the short presence of the "tech man" seems to reflect the condition of the labor performed by workers in

⁵⁶ Marx, Karl. "Chapter 15: Machinery and Large-Scale Industry ." In *Kapital* 1, 1:492–508, 1867.

⁵⁷ Isaac Asimov, "Chapter 12 ," in *The Foundation Trilogy* (New York, NY: Del Rey, an imprint of Random House, 1992), pp. 220-221.

the industrial economy, and their further separation from the labor they perform as technology progresses.

At the same time, in the writings of Asimov we have these examples of industrial labor, and conquest taking place on a galactic scale.⁵⁸ Thus, they are certainly not tied to the same reliance on a physical infrastructure, as all of us using tech are today. And yet, it is here that we find the allure of science fiction that the tech industry seems to gravitate towards, the allure of the vast expanse of space as an inconsequential means of resource accumulation. Not just in the literal sense of Elon Musk wanting to reach Mars, but also for the implication it provides for things like “the cloud” and the internet in the realm of cyberspace, the potential for infinite expansion separate from the resources of Earth.

Consequently, the decentralized nature of cyberspace not only hides technology company’s ties to environmental harm, and labor injustice, but also hides the “information economy’s” ties as whole to the industrial infrastructure, and capitalist labor systems that came along with the industrial economy that predated it. This has specific implications for both labor, and environmental reform in Silicon Valley when we consider the historical interplay between labor and the environment in organizing historically in Santa Clara County. Historically, the harm an industry causes to the environment, or bodies of those in the environment has been used as a leverage point for labor organizing in the Valley.⁵⁹ For example, in the late 1970s and the

⁵⁸ 1. Jill Lepore, “The Evening Rocket: Dimension X: Elon Musk: The Evening Rocket,” Pushkin Industries, September 2022, <https://www.pushkin.fm/podcasts/elon-musk-the-evening-rocket/the-evening-rocket-dimension-x>.

⁵⁹ Christophe Lécuyer, “From Clean Rooms to Dirty Water: Labor, Semiconductor Firms, and the Struggle over Pollution and Workplace Hazards in Silicon Valley,” *Information & Culture* 52, no. 3 (2017): pp. 304-333, <https://doi.org/10.7560/ic52302>.

1980s, in order to address the pollution and occupational health hazards occurring as a result of the semiconductor industry, the Santa Clara Center of Occupational Safety and Health (SCCOSH), the Silicon Valley Toxic Coalition (SVTC), and those in the labor movement against the Semiconductor Industry Association (SIA), IBM, and other large firms formed an organizational force for reform.⁶⁰ Though this movement was not considered a success for labor organizing, it brought the environmental contamination the semiconductor industry caused to aquifers in the area, as well as the occupational hazards faced by workers in the semiconductor plants to light. Additionally, holding semiconductor firms such as Lockheed responsible for some of the clean-up. Furthermore, the potential loss of this leverage point due to the elusiveness the internet as a whole creates around environmental impact exasperates the issue of organizing the Valley.

Consequently, the potential of environmental threats being invisible within the technology industry extends farther than just its threats to labor organizing within the Valley, it also poses threats to local communities that face the brunt of the harm from poisoned landscapes. The majority of those affected by harm done to the environment at the present, and historically have been working class families, and people of color in the United States. Moreover, this was the case historically going back as far as the settlement of Spanish Town, which faced the brunt of the pollution from the New Almaden mine in the 1800s.⁶¹ This was again viewed through the appropriation of the imagery of the crop-dusting plane by the Royal Chicano Air Force, highlighting a technology that harmed the environment just as much as it harmed the worker in

⁶⁰ Christophe Lécuyer, "From Clean Rooms to Dirty Water: Labor, Semiconductor Firms, and the Struggle over Pollution and Workplace Hazards in Silicon Valley," *Information & Culture* 52, no. 3 (2017): pp. 304-333, <https://doi.org/10.7560/ic52302>.

⁶¹ Stephen J. Pitti, "Chapter 3: Transnational Industries," in *The Devil in Silicon Valley: Northern California, Race, and Mexican Americans* (Princeton, NJ: Princeton University Press, 2003)

the field. Examples of this intersection between environment, class, and race, has been highlighted in various parts of California's development. Moreover, the clear presence of this intersection stretching centuries back in history and persisting through various industries in the Valley highlight its importance. It is because of this, Silicon Valley's structures making invisible both the labor, and the infrastructure needed to maintain its existence has detrimental impacts on the sustainability of the structure as a whole.

The realization of connections between the environment, labor, and race in the Valley, and their ties to the ability to organize labor through this recognition, expose something important for the global form capitalism has taken. Before arguing this point there are three points that must be understood. The first is because the internet conveys almost an "infinite" quality for its expansion in cyberspace, as many companies started in Silicon Valley, I highlight it as a central place for this expansion outward. The second is, viewing the Valley as a physical space for the internet's expansion outward can help us view a reproduction of the labor model created in the Valley even before the technology industry on a global scale. Finally, since this system is "based on" the decentralized system that has grown from its center the environmental, as well as other impacts become harder, and harder to track back to its original source. It is through this that Silicon Valley creates "progress" of technology that alleviates the need for infrastructure in the Anthropocene.

Without a visible hand to turn the dirt, there is no infrastructure to carry the modern internet, only information fragments carried along cyberspace in an infinite universe separate from our own. Without community outcry, there is no environmental harm to be seen. Without

physical grounds, there are no laborers to be found. Environment in relation to labor is important to exposing the physical infrastructure that aids in maintaining cyberspace.

Visual References for this Chapter:

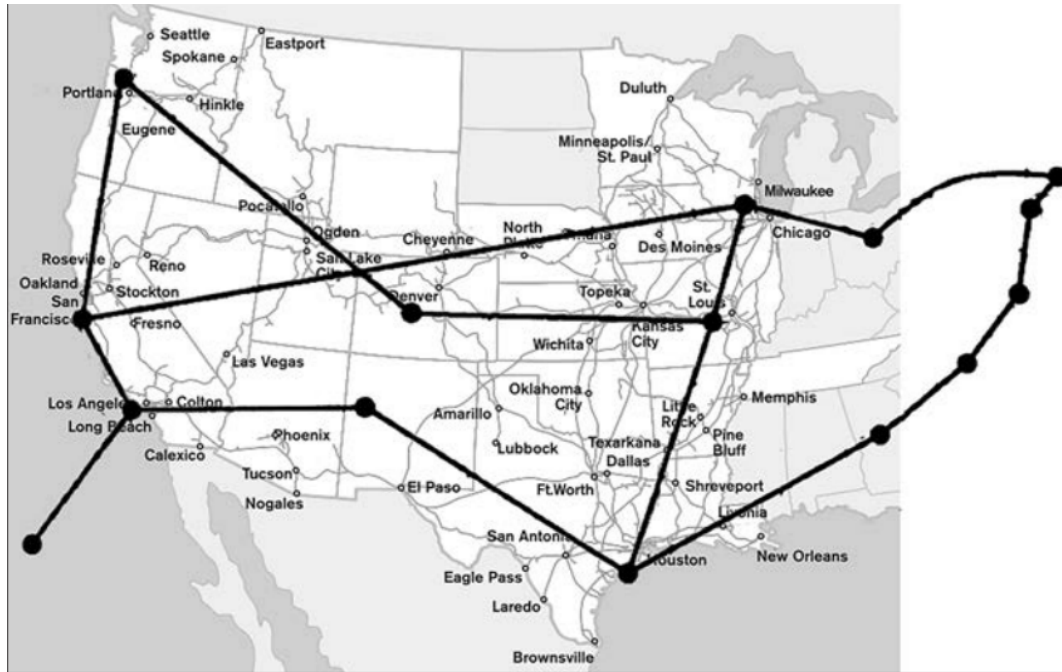


Figure 5: Figure 3 from “The Environmental History of Computing” showing NSFnet overlaid with Southern Pacific Railroad network

Conclusion: The “Fall” of Big Tech

It is quite funny to reflect upon the environment in which I began writing this project, and the reality of that same environment now. Silicon Valley Bank failed as I was writing this, causing many startups to fail. Contract employees for Google and YouTube Music in Austin Texas and in New York City organized their first strike with their union over the unfair call to return to office. This strike garnered the attention of politicians such as Senator Bernie Sanders.⁶² With the accumulation of stories surrounding the technology industry in which Silicon Valley is the epicenter of, many have been asking, “is this the end of big tech?” While answering that question would necessitate the writing of another fifty pages and would be a good sequel, I would like to leave the reader of this project with the tools to answer another question that is essential to answering the aforementioned one. That is, does it matter if big tech fails if it is using the same models of extracting capital from labor as the industries that predate it?

Chapter one of this book attempts to show the reader that Silicon Valley is so much more than a place where most tech innovation happens. Rather, it is a place that was built to create a certain environment where all the cogs of labor and innovation could fit together in the physical realm. Decentralized both in life, and in work, the separation of labor does not occur here by anything with a substance that reflects “skill,” but rather relies on the cheap labor of Mexicans, Mexican Americans, and other immigrants. However, this would not be possible if the racialized line of labor had not already been reinforced time and time again throughout the state’s history. Moreover, the segregation of neighborhoods in the Valley despite not being enforced by law still

⁶² Julia Forrest, “Google Contractors on Strike in Austin Hope to Rally Support among Tech Workers,” The Texas Tribune (The Texas Tribune, February 23, 2023), <https://www.texastribune.org/2023/02/23/google-youtube-strike-austin/>.

provided an isolating force that aids in decentralizing workers as a means to make organization difficult. Another force of decentralization that was brought up was contract labor which alleviates a technology company's responsibility from labor mistreatment of laborers hired through these contract companies. Thus, what we have here is two key factors: physical separation of different labor forces not by skill but factors such as race, and class, and separation of technology companies from liability for a lot of the mistreatment of workers occurring in their supply chain. Tech C.E.O.s such as Elon Musk frequently tout this as the way toward the future and improvement, quoting Isaac Asimov to further justify their individual visions, and given what science fiction has given us with regards to past histories, he and others are not necessarily being disingenuous. After all, it is the industrial mode of production and labor they are relying on to get to Mars, those pushing the buttons of the machines, not the machine itself.

Chapter two utilizes Octavia Butler's works in order to show her contributions to the historical study of California in the form of her archive in the Huntington Library, as well as to show that science fiction writers have long been utilizing themes that are just as inherent to our past as they are to the writer's future world. This chapter presents Butler to the reader as not only essential to the historical documentation of labor, race, gender, and environmental intersections in the Valley, but also her fictional writing of *Parable of the Sower* as a one of many possible outcomes if the Valley continues with industry the way it does at the present. Furthermore, it is within the intersections that Butler points out that exposes the hidden impacts the technology industry is able to more or less avoid responsibility for.

The final chapter acted as the "physical proof" of these intersections' impacts. In this chapter, the reader is provided with maps overlaying physical infrastructure with the

infrastructure of the internet giving them a basis in industrial production. Moreover, the chapter discusses how the visible impact of the environment in previous iterations of the Valley's economy was a necessary leverage point for organizing a location as decentralized as Silicon Valley. The chapter closes with a reflection of the fall of a decentralized Asimovian Empire in which the "techman" laborer knows nothing of their position in the greater system, and thus his impacts as a whole.

Thus, reader, I offer the question up for reflection once more. Does it matter if big tech fails if it is using the same models of extracting capital from labor as the industries that predate it? The plot twist is that the answer is "yes."

While some science fiction shows a future in outer space, and others portray apocalyptic worlds on Earth all dependent on human action, in the real world, it is safe to say that they have created a new frontier that was dependent on the actions of humans, the internet. This new space, hovers above us, seemingly ambivalent to the actions that gave rise to it, yet it does something else too. It has stripped away the layers of skill and skin exposing our "robota" form to society. Our machines download our memories, our skills, but only those that fit the narrative of society. My LinkedIn profile encourages me to take tests in skills, yet most of these skills go back into maintaining functions of the internet and lack any formal recognition of the skill in the physical realm. Contract labor has extended to other parts of the technology industry, and overseas to factories that produce the physical technology that connect us to this new realm. Thus, like previous iterations of economies under capitalism, the "post-industrial" economy of the Valley even if it "fails" will nearly continue to expand using the same mechanisms of accumulation.

However, what makes this situation possibly more damning if big tech does fail, is the internet as a factor in shaping these mechanisms, which is something we have not seen.

I want the reader of this project to leave with the idea that to understand the structure of the internet is to understand the structures we build in our own environment. As such, this requires an understanding of environmental impacts, labor histories, and societal structures under which such a thing as the modern internet was born. Furthermore, its reliance on older industrial forms of extraction of labor, and resources and the societal structures that maintain this system of extraction is nowhere better recognized than in the realm of science fiction. Through the works of Butler, Asimov, and Rivera we are allowed to view the potential consequences faced in societies if decentralization of industry is pushed to a certain degree. In each of their respective works the loss of “skill” as a result of decentralization is evident, and for Butler in particular, who wrote specifically of California in *Parable*, environmental consequence also was a result of present structures in society.

Alas, with the understanding of the internet as something that plays into our environment, and societal structures, also comes with the understanding that the computer cannot possibly be a machine in the Marxist sense. Even if you use yours for labor! Like the environment we tread on the environment of cyberspace is one connected to greater systems outside the modes of private production. Half the articles I cite in this project are accessible through a link if accessing this paper digitally. Thus, anyone can access those articles, and critique my arguments as they see fit. Moreover, through the internet anyone can write an email to their boss, equally as much as they can research information on how to organize their workplace. There is something granted in the open access of information on the internet when its environment is understood.

Bibliography

- Asimov, Isaac. "Chapter 12 ." Essay. In *The Foundation Trilogy*, 220–21. New York, NY: Del Rey, an imprint of Random House, 1992.
- Bacon , David. "Organizing Silicon Valley's High Tech Workers ." Organizing Silicon Valley's high tech workers, 1999. <http://dbacon.igc.org/Unions/04hitec1.htm>.
- Biddle, T, R Chakraborty, Q Li, M Maltz, J Gerrard, and D Lo. "The Drying Salton Sea and Asthma: A Perspective on a 'Natural' Disaster." California Agriculture. University of California, Agriculture and Natural Resources, April 22, 2022.
<https://calag.ucanr.edu/archive/?article=ca.2022a0003>.
- Butler, Octavia E. *Parable of the Sower*. NYC, NY: Grand Central Publishing , 2021.
- Crawford , Kate, and Vladan Joler . *Anatomy of an A.I. System* . January 25, 2023.
- Deleuze, Gilles. "Postscript on the Societies of Control*." *L'Autre journal* 1 (May 1990). pp.1-7
<https://doi.org/10.4324/9781315242002-3>.
- Ensmenger , Nathan. "The Environmental History of Computing ." *Technology and Culture* , 4, 59 (October 2018): S7–S33. <https://doi.org/https://doi.org/10.1353/tech2018.0148>.
- Ensmenger, Nathan, and Rebecca Slayton. "Computing and the Environment: Introducing a Special Issue of Information & Culture." *Information & Culture: A Journal of History* 52, no. 3 (2017): 295–303. <https://doi.org/10.1353/lac.2017.0011>.
- Forrest, Julia. "Google Contractors on Strike in Austin Hope to Rally Support among Tech Workers." The Texas Tribune. The Texas Tribune, February 23, 2023.
<https://www.texastribune.org/2023/02/23/google-youtube-strike-austin/>.
- Jamieson, Ayana, and Michelle Bailey . "Mining the Archive of Octavia E. Butler." The Huntington. Verso , June 22, 2017.
<https://huntington.org/verso/mining-archive-octavia-e-butler>.
- Jordan , John. "The Czech Play That Gave Us the Word 'Robot'." The MIT Press Reader. MIT , January 14, 2021.
<https://thereader.mitpress.mit.edu/origin-word-robot-rur/#:~:text=The%20word%20itself%20derives%20from,were%20neither%20metallic%20nor%20mechanical>.

- Lécuyer, Christophe. "From Clean Rooms to Dirty Water: Labor, Semiconductor Firms, and the Struggle over Pollution and Workplace Hazards in Silicon Valley." *Information & Culture* 52, no. 3 (2017): 304–33. <https://doi.org/10.7560/ic52302>.
- Lepore, Jill. "The Evening Rocket: Dimension X: Elon Musk: The Evening Rocket." Pushkin Industries, September 2022. <https://www.pushkin.fm/podcasts/elon-musk-the-evening-rocket/the-evening-rocket-dimension-x>.
- Marez, Curtis. *Farm Worker Futurism: Speculative Technologies of Resistance*. Minneapolis, MN: University of Minnesota Press, 2016.
- Marez, Curtis. "Octavia E. Butler, after the Chicana Movement." *Women's Studies* 47, no. 7 (2018): 755–60. <https://doi.org/10.1080/00497878.2018.1518621>.
- Marx, Karl. "Chapter 15: Machinery and Large-Scale Industry ." Essay. In *Kapital* 1, 1:492–508, 1867.
- Jason W. Moore, "The Rise of Cheap Nature," in *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism* (2016), pp. 78-115;
- Nakamura, Lisa, Peter Chow-White, and Curtis Marez . "Chapter 4: Cesar Chavez, the United Farm Workers, and the History of Star Wars." Essay. In *Race after the Internet*. New York, NY: Routledge, 2012. pp. 85-106.
- Norman, Andrew. "Workers Leaving the Googleplex ," 2011. <http://www.andrewnormanwilson.com/WorkersGoogleplex.html>.
- Pitti, Stephen J. *The Devil in Silicon Valley: Northern California, Race, and Mexican Americans*. Princeton, NJ: Princeton University Press, 2004.
- "Scientific Management Theory Explained ." Villanovau.com. Villanova University , September 9, 2022. <https://www.villanovau.com/resources/leadership/scientific-management-theory-explained/>.
- Strauss, Neil. "Elon Musk: The Architect of Tomorrow." Rolling Stone. Rolling Stone, July 29, 2020. <https://www.rollingstone.com/culture/culture-features/elon-musk-the-architect-of-tomorrow-120850/>.

Zolniski, Christian. *Janitors, Street Vendors, and Activists: The Lives of Mexican Immigrants in Silicon Valley*. Berkeley, CA: Univ. of California Press, 2008.

“About Page.” OEB legacy. Accessed April 7, 2023. <http://octaviabutlerlegacy.com/>.