DIMINSHED PROSPERITY AT THE INTERSECTION OF CLIMATE CHANGE AND REPRODUCTIVE JUSTICE: HOW A WARMING PLANET IMPEDES HEALTHY FAMILIES, COMMUNITIES, AND ECONOMIES

by

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Abstract

SARAH HALEY KNOWLES. Diminished Prosperity at the Intersection of Climate Change and Reproductive Justice: How a Warming Planet Impedes Healthy Families, Communities, and Economies.
(Under the direction of DR. STEPHANIE MOLLER)

This dissertation explores the relationship between climate change, reproductive justice, and the prosperity of families, communities, and economies through a comprehensive literature review, a new theoretical framework, and the findings of a new study that examines the relationship between the adverse impacts of a changing climate and the cost of living, represented by increases in food prices, housing costs, and health care expenditures, and the associated impact on declining birth rates across the United States. Study results support the hypotheses that indicators of a changing climate positively correlate with increased costs of living and decreased birth rates, paving the way for the introduction of a new prosperity model based on a four-part test to promote, protect, and advance the health and long-term viability of families, communities, economies, and ecosystems through sustainable and responsible economic principles, means, and indicators of success.

Chapter one establishes the foundation for a new theoretical framework by first examining how climate change, reproductive justice, and societal prosperity interact with a review of the climate change science literature, including the unequal consequences of climate change based on the health and social harm disparities for low-income, women of color, and the need for the reclaiming of bodily autonomy given who is most impacted. Chapter two builds upon this foundation by recalling the historical legacy of settler colonialism, especially the exploitation of indigenous women; examining how the history and continuation of consumerism, white feminist ideology, and corporate expansion creates and maintains the oppression of nonwhite women in the name of economic and societal progress; and calling for a reconstruction

of feminism and corporate success metrics towards a new model that promotes, measures, and protects prosperity for all. Chapter three completes the theoretical framework by exploring how a modern society measures prosperity through a review of classical economic theory, historical policy approaches to promoting healthy families and communities, and traditional corporate indicators of financial performance; and calling for a new prosperity model based on both financial and nonfinancial performance measures with equal considerations to society, the planet, and the economy.

Leveraging the theoretical framework developed through chapters one, two, and three, the results of a new study that measures the relationship between outputs of climate change and components of reproductive justice is summarized and discussed. Using state-level panel data over a twenty-five year period and four fixed effects linear regression models, the relationships between (1) soil moisture and food expenditures, (2) extreme weather events and housing expenditures, (3) surface temperatures and health care expenditures, and (4) the cost of living and birth rates is examined. Findings show a positive correlation between consequences of a changing climate and increased costs of living and a negative correlation between increased living costs and birth rates. The findings support the need for a new model of prosperity, which is introduced based on four market approaches – engage, evolve, enhance, and engage – and the preconditions, benefits, and goals attached to each one. Implications and considerations for private industry and public policy are discussed, along with the need for additional research to better understand the new model's application to and effectiveness in predicting, determining, and protecting societal prosperity at both micro and macro levels.

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Introduction

In November 2023, a summary of the findings of the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report was published, highlighting the state of climate change, its widespread impacts and risks, and proposed solutions for climate mitigation and adaptation. With a target audience of policymakers, the report outlines the interdependency of climate, ecosystem services, and human societies, along with the relationship between a changing climate, ecosystem health, human well-being, and sustainable development. Among the findings is unequivocally evidence that the past two decades saw global surface temperatures reach 1.1 degrees Celsius above temperatures previously recorded during the preceding 150 years. The report concludes with high confidence that global greenhouse gas emissions are caused by human activity, particularly through the emitting of greenhouse gases caused by unsustainable energy use, land use, industrial production, and consumer lifestyle and consumption behavior (Lee et al 2023).

Anthropogenic climate change, also known as human-induced climate change, refers to the long-term changes in the Earth's climate primarily caused by human activities. In 2021, a study explored the main causes of climate change, including over-exploitation of natural resources, agricultural practices, landfill use, deforestation, pollution, and natural cyclical changes, and concluded that five of the six main causes are directly tied to human activity (Panda & Maity). The scientific consensus is that human activities are the main cause of the observed warming since the mid-twentieth century, isolating the burning of fossil fuels as the primary source of emissions trapping heat in the atmosphere that causes the planet to warm. Unabated global warming has led to a range of adverse impacts to the planet, including sea level rise, changes in precipitation patterns, more frequent and severe extreme weather events, and

biodiversity loss. Yet, even with an overwhelming scientific consensus of the cause and impact of climate change, most Americans disconnect their day-to-day activities with the consequences of a warming planet, content with associating adverse climate impacts with something tragic that happens to other people and in foreign communities in faraway places.

When people think about climate change, they often visualize extreme hurricanes, typhoon-style rainstorms, crippling heatwaves, or abstract impacts to communities located worlds away. It is not uncommon for extreme weather to be associated with apocalyptic blockbusters, media-driven fearmongering, and complicated, hard-to-understand science talk, which may render it difficult for the average American to see the link between climate change and their everyday life or be motivated to look for it. Of those who may make the connection between extreme weather conditions and adverse impacts to food, housing, and health care; they may also dismiss the unsettling reality as something happening to people elsewhere, not as an imminent danger to them or their neighbors, those preoccupied by their busy lives, vibrant social media feeds, and inbox tickers. This may partly be because they do not have an in-depth understanding of the relationship between climate and local economies, and partly due to fear or a refusal, likely a subconscious one, to accept the harsh realities of climate change, as jarring and overwhelming as they are. Whatever the cause, my research explores the possibility that the same consumer-driven, corporate lifestyles fueled by jammed-packed schedules, bigger-is-better mantras, and instant gratification, single-use, convenience-orientated solutions that are driving climate change, may also be keeping most Americans too busy to notice the slow, but steady, changing climate around them, resulting in most Americans being ill-prepared for the adverse impacts of climate change.

Ironically, however, is that the development, promotion, and protection of strong, healthy families, safe, vibrant communities, and flourishing, resilient economies is often listed at the top of both constituents' priorities and policymakers' agendas, regardless of party affiliation. Core family values, livable neighborhoods, and growing businesses are top of mind for most voters. Protecting the ability to realize the "American dream" is lauded by politicians on both sides of the aisle as what they fight for. Yet, the same policymakers who pledge to protect the right and the ability of all Americans to secure safe housing, nutritious food, and clean bills of health, are also those who often fail to tackle the root causes of homelessness, food insecurity, and poor health outcomes. Further, while the inability to afford adequate housing, food, and healthcare is repeatedly credited as a reason people choose to not have children or to have less children, rarely do policymakers link family planning decisions to an increasingly significant underlying cause of economic instability: climate change, or the change in the planet's average temperature primarily caused by human activities.

A 2014 *Pew Research* poll found climate change ranked last on a list of 21 issues that the government should prioritize for action ahead of 2012 Presidential Election. Two elections later, a similar survey explored voter priorities ahead of the 2020 election and found climate change rose to 13th on a list of 30 priority issues, with 60 percent of voters stating that climate change is an important issue when deciding who to vote for, an increase of 14 points from the 2016 election. However, only 4 percent of Americans polled identified climate change as the most important issue. In addition, while most registered voters believe that corporations, policymakers, and communities should be doing more to address climate change, only 2 percent are currently participating in climate action and only 13 percent claim they have reached out to an elected official to encourage climate action in the last 12 months (Leiserowitz et al 2020).

While recent studies evidence that Americans are concerned about climate change, most voters continue to place climate action towards the bottom of their priority list. Accordingly, a 2019 poll from the *Yale Program on Climate Change Communication* found that 45 percent of Americans believe that people in the United States are currently being harmed by global warming, with 43 percent stating they believe they will be harmed by climate change, 49 percent believing their family will be harmed, and 56 percent believing climate change poses a risk to their community. Yet, 33 percent of Americans state that climate change is not personally important to them, with 59 percent indicating they do not discuss climate change with their family or friends and only 40 percent perceiving an expectation for individuals and American households to act on climate change. While most Americans think global warming is affecting weather in the United States, causing concern about harm from extreme weather events, approximately half of Americans believe climate change will be solved with the use of new technologies without requiring changes to lifestyles or consumer behavior (Leiserowitz et al 2020).

With over half of Americans claiming to understand the impacts of climate change to their families and communities, why does acting on climate change continue to take a back seat to other voter issues, such as inflation, employment, community safety, and healthcare? A 2023 report by the United States Department of the Treasury (USDT) illustrates how American households will experience significant financial strain due to climate change, referencing increases in groceries, utilities, and housing costs, including $56.92 billions of climate-induced property damages impacting one in ten American households for the year 2021 alone (USDT 2023). However, are heads of households accounting for climate-related expenses? And if not, what are the consequences of not being prepared?

Global warming and the associated impacts of climate change can be unpredictable. Without proper planning and social and economic safety nets, most households will suffer due to the impacts of climate change. What is less clear, however, is how climate change influences individual concepts of freedom, or the ability to freely choose a travel plan or career path; a couple's or family's realization of full autonomy over food choices, living arrangements, and fertility desires; and society's understanding of prosperity, feminism, and equality within the constructs of family planning. The inequitable impacts of a changing climate make it not only harder to address the root causes of global warming, but also create new barriers for maternal health outcomes and the attainment of a gender-equal world. Deeply embedded in the advent of extreme weather events, higher temperatures, prolonged droughts, and failing crops, is the inability for individuals, families, and communities to choose their reproductive destinies. Although often ignored, misunderstood, or exploited, addressing the link between climate change and reproductive freedom is essential for the continued protection and fulfillment of full bodily autonomy, gender equality, and social justice.

While an awareness of the comprehensive relationship between climate change and feminism is limited, the link between the two is not an entirely new concept. In 1993, the iconic "*Ecofeminism: Women, Animals, Nature,"* edited by Greta Gaard, was published. In it, a series of essays rejected the nature and culture duality derived from patriarchy while exploring how oppression of nature mirrors the oppression of women (Larocque 1993). More recently, in 2019, Ireland's former and first female president, Mary Robinson, published "*Climate Justice: A man-made problem with a feminist solution*" to shed light on how the climate crisis is fundamentally a crisis of humanity by highlighting how systemic issues like sexism, racism, and classism both create and sustain global warming. Climate change is not just about greenhouse gas emissions; it

is about the violation of human rights through rampant food shortages, unemployment, infectious disease, and homelessness, all of which ultimately impact the ability of families, communities, and economies to flourish, thrive, and survive. Therefore, my research explores how climate change is born of an oppressive patriarchal system spun by threads of white supremacy, extractive capitalism, and unequal distribution of power and consequence.

In 2020, researchers Zalak Desai and Zhanghat Ying examined 35 academic articles that explored the link between climate and reproductive health and concluded that reproductive health outcomes are highly vulnerable to the impacts of climate change, with societal, cultural, and economic factors determining the level of correlation. Their findings include increased climate vulnerability for women, due to extreme weather events adversely impacting the agricultural industry where women primarily are employed, and, in turn, increasing the risk of nutritional deficiencies, food insecurity, and vector-borne diseases, with pregnant women more likely to experience exhaustion and hypertension leading to an increased risk of miscarriage and stillbirth (Desai & Ying 2020). Yet, while many studies show that climate change has a significant impact on the health and wellbeing of individuals and communities around the world, especially women, few, if any, explore how a changing climate restricts an individual's bodily autonomy through the lens of reproductive justice.

Reproductive justice, first coined by the *Women of African Descent for Reproductive Justice*, a group of Black women who gathered in Chicago during the summer of 1994 to craft the basis for addressing reproductive oppression, was born out of the understanding of social justice and the failures of the reproductive rights movement. Women of color, who for centuries suffered the worst forms of reproductive violence, were largely excluded from the white women-led pro-choice campaigns and desired a new framework to protect themselves and their

communities from reproductive oppression, or the “control and exploitation of women and girls through their bodies, sexuality, and reproduction as a strategic pathway to regulating entire populations that is implemented by families, communities, institutions, and society,” (Venkatraman 2020).

The reproductive justice framework was created to advocate for freedom “based in the human right to make personal decisions about one's life, and the obligation of government and society to ensure that the conditions are suitable for implementing one's decisions” and to govern the ability to freely choose to not have a child, to have a child, and to parent children in a safe and healthy environment (Ross 2017). Therefore, as climate change increases health risks and barriers to comprehensive health care, which infringes upon the right to freely choose to have a child or not to have a child, and decreases the availability of affordable, adequate housing and nutritious food, which limits the ability to raise children in safe and healthy environments, climate change also worsens maternal health outcomes while exacerbating reproductive health inequities.

An increased understanding of the relationship between climate change and reproductive justice will contribute to society in several ways, including deepening the understanding of the relationship between climate change and food prices, affordable housing, and access to health care; exploring the social implications of rising food prices, rapid urbanization, higher temperatures, and increased infrastructure collapse; understanding how these impacts create additional barriers to family planning decisions; and assisting with agenda setting of public policy priorities to address climate change mitigation and adaptation strategies to promote healthy families, communities, and economies. With increased knowledge of how climate interacts with fertility desires, living costs, and market viability, among other things,

policymakers and industry leaders can make more informed, effective, and strategic decisions to promote, protect, and advance prosperity among families, communities, and economies.

Throughout the next three chapters, the relationship between climate change and the health of families, communities, and economies is examined. The first chapter builds a foundation for examining how climate and prosperity interact by summarizing the climate change science literature that addresses the health and social harm disparities for low-income communities, as compared to other communities, with a particular emphasis on disproportionate impacts to low-income women of color, and the doctrines of full bodily autonomy, reproductive justice, and green criminology to establish the connections between reproductive injustice and the adverse impacts of a changing climate. Chapter two builds upon this foundation by recalling the historical legacy of settler colonialism, especially the exploitation of Indigenous women and their ongoing oppression, and examining how corporate expansion, consumerism, and white feminism create and maintain corporate colonialism, drive climate change, and ultimately contribute to the colonization of low-income communities and communities of color.

Finally, chapter three explores how a modern society measures prosperity, along with what the role of family, community, and economy are within the constructs of a prosperous society. In this chapter, my original research study is introduced to examine the relationship between the adverse impacts of climate change, measured through soil moisture, increased daily temperatures, and increased incidents of extreme weather, and the cost of living, represented by increases in food prices, housing costs, and healthcare expenditures. The correlation between climate change and living costs is then measured against trends in birth rates. Last, chapter three introduces a new model for measuring prosperity based on a four-part test which promotes, protects, and advances the health of families, communities, and economies through sustainable,

responsible, and economic principles, means, and indicators of success. Through my research, I hope to strengthen and expand our collective understanding of both the drivers and the lasting consequences of climate change so that we can put forth effective policies and solutions to address the root causes of a changing climate, while also protecting the health and prosperity of society, the planet, and the economy.

Chapter 1: *Ethical Considerations at the Intersection of Climate Change and Reproductive Justice: Directions from Green Criminology*

Introduction

Climate change does not impact us all equally. The impacts of extreme weather and climate events are influenced by societal structures. Socioeconomic power, cultural norms, and traditional roles make some people more vulnerable to climate change than others. Therefore, the consequences of rising sea levels, increased temperatures, drier conditions, and more extreme storms are disproportionately felt by low-income communities and women, particularly women of color. As climate change increases, the harm caused to women and young girls infringes upon their bodily autonomy. Yet, long absent from the climate debate is the issue of reproductive justice. In addition to understanding how barriers to healthcare are considered a reproductive injustice, this chapter explores other incidences of reproductive injustice, as well, such as barriers to nutritious food, safe housing, clean drinking water, or anything that obstructs the right to full bodily autonomy or the right to freely choose to have a child, to not have a child, or to raise a child in a healthy environment. Full bodily autonomy is vital for equitable communities. However, reproductive justice is often ignored by policymakers seeking to solve and mitigate climate change, further exacerbating the injustice.

Chapter 1, Section I: The Gendered Experience of Climate Change

In 2011, researcher Seema Arora-Jonsson pointed out, “It is clear that more context specific case studies are needed to understand the linkages of gender and climate change – comparative case studies that examine not only relationships and adaptations on the ground but

also ask new questions from different vantage points" (Arora-Jonsson 2011, p. 749). Responding to a collection of studies on the relationship between climate and gender, Arora-Jonsson acknowledged the gaps in the research. Since then, additional studies continue to explore the impacts of climate change as experienced through social structures and cultural power dynamics. Historically oppressed populations experience climate change more intensely than those with privilege and power. Gender, along with poverty and education-level, is an indicator of vulnerability to climate change (Alston 2013). As such, the literature shows that women are impacted by climate change more than men and poor women and women of color are impacted the most. The literature divides climate change impacts to women into several categories, including: a cycle of poverty, extreme weather events, housing, nutrition, maternal healthcare, and domestic violence.

The Cycle of Poverty

Globally, women and young girls have lower socio-economic power than men and experience poverty at a much higher rate. The same cultural, historical, political, and economic factors that influence the cycle of poverty disproportionately impacting women are also responsible for the inequitable distribution of climate change impacts. A 2015 study conducted on the impacts of climate events on women in Bangladesh, largely considered the country with the worst climate impacts today, concluded that "the distribution of five livelihood capitals (human, natural, financial, social, and physical) of women are heavily influenced by several climatic events, such as cyclone" (Asaduzzaman 2015, p. 5). In communities on the frontlines of climate change, the roles women and young girls fulfill are decided by the cultural and religious norms of the region. As a result, women and girls are likely to be caregivers and responsible for gathering water and fuel for fires for their families. Women are also responsible for

approximately 50 to 80 percent of the global food-producing workforce but only own around 20 percent of the land (Pachauri & Meyer 2014). This leaves them without a safety net when disasters strike and makes them dependent on others for their livelihood. In addition, women are usually responsible for caring for children and aging parents. As a result of the roles women traditionally fill, such as primary caregivers and providers of food or fuel, they along with young girls are more vulnerable when climate events occur, such as hurricanes, flooding, or drought (Alston 2013).

Climate change directly impacts women and young girls whose livelihoods depend upon water, wood, and food resources. With increased temperatures, stronger storms, flooding, drought, and crop depletion, crop yields, water, and wood sources are becoming more unreliable due to climate change. This results in women and young girls who fulfill these roles having to walk farther every day to reach the resources or work harder to plant and harvest additional crops (Pachauri & Meyer 2014). In addition to the health impacts of increased labor, this added time and work limits the time women and young girls must perform other tasks, such as attend school or acquire new skills. These intense workloads often result in young girls leaving school to assist their family with chores (Lane & McNaught 2009). This perpetuates a cycle of poverty not only in communities on the frontlines of climate change but in communities all around the world where women have less socioeconomic power and tend to take on more traditional roles.

Mortality and Displacement from Extreme Weather

One of the biggest consequences of climate change is an increase in extreme weather events. The ability to prepare for, survive, and recover from natural disasters is contingent on many factors, including gender. The same cultural, historical, political, and economic factors that lower socioeconomic power and increase the rate of poverty for women and young girls also

create disparities in casualties from natural disasters. In frontline communities, women are more likely to be responsible for disaster-preparedness of the household, including food and water preparation, organizing household belongings, notifying family members, and caring for young children and elderly parents. As a result, women have more work to do before and after a disaster and less time to evacuate (Alston 2013). A 2005 study on the aftermath of a tsunami in Indonesia, Sri Lanka, and India found the rate of men who survived the storm outnumbered surviving women by four to one. The study concluded "the reasons for this are similar across [all the] countries: women died because they stayed behind to look for their children and other relatives. Women in these areas often can't swim or climb trees, which meant that they couldn't escape" (MacDonald 2005, p. 474).

A study conducted in 2007 looked at natural disasters in 141 countries over a 20-year period, along with casualties based on gender and the level of socioeconomic power women typically possess within the associated culture. The study found that women represent the majority of those most impacted by climate disasters and are 14 times more likely to die in a disaster than men. As a result, women's life expectancy is lowered from disasters at a much higher rate than men's, more women are killed from disasters than men, and women are killed at a much younger age during disasters than men are. In addition, the relationship between the intensity of the climate disaster and women's rights and the impact to the gender gap in life expectancy is well documented. As the strength of a disaster increases, the gender gap in life expectancy also increases. These disparities are reduced in countries where women have increased socioeconomic power (Neumayer & Plümper 2007).

A Lack of Affordable Housing

For women and young girls able to evacuate before a climate event occurs or fortunate to survive a natural disaster, returning home and recovering from a disaster can be very challenging. With lower socioeconomic status, women, particularly women of color and single-mother households, experience poverty at a higher rate and, therefore, suffer more long-term impacts from climate events than men do. This complicates and extends recovery efforts for these households, even in the presence of disaster recovery aid. For example, a 2007 study found that women are more likely to be excluded from disaster aid distribution due to their roles and needs being undervalued and often ignored by aid organizations and community workers (Dominelli 2013). Often, the barriers to returning home following a disaster go beyond just housing. For example, rebuilding efforts, particularly construction jobs, which are traditionally male dominated fields, often are the main source of employment. A study conducted in 2005 found that after Hurricane Katrina, 83 percent of single mothers were unable to return home and two-thirds of jobs lost after the disaster were lost by women (NRDC 2005).

A study published in 2015 found that Black women, especially single mothers, were most impacted by Hurricane Katrina. The study analyzed interviews with 184 low-income Black women who were living in one of the four largest public housing projects when Hurricane Katrina made landfall in 2005. More than half the low-income households located in impacted areas were headed by single Black mothers. Respondents “were less concerned about getting back to traditional public housing, particularly as that option disappeared, and were more preoccupied with getting a job or another source of income to pay their expenses, including the added costs such as health and childcare, transportation, higher rents, and utilities” (Henrici & Shaw 2015, p. 25). One of the major findings in the study was the erosion of community networks and safety nets following the disaster and the impact to single mother households.

Because single-mother households are reliant on interdependent community networks for everyday needs, the direct impacts of the storm to infrastructure, jobs, public transportation, and housing prevented most Black women living in public housing from being able to return home (Henrici & Shaw 2015).

As a result of mass displacement, climate change is a primary driver of migration, including both migration within countries of residency and immigration to other countries. As previously discussed, communities in developing countries and those on the frontlines of climate change are reliant upon food production for their livelihood. These same communities are experiencing declines in crop yields and food production due to climate change. Climate scenarios predict this trend will increase as global warming increases, along with water scarcity, drought, and erratic weather patterns. As crop yields decline, saltwater intrusion increases due to sea level rise, and extreme weather continues to impact coasts, crops will fail. Those most impacted by these trends are low-income food producers who do not own land and who have little to no socioeconomic power, mainly women (Pachauri & Meyer 2014). As a result, migration has increased exponentially, particularly in developing countries such as Central America and the Middle East, as bankrupt farmers and displaced populations seek refuge and new opportunities. The literature predicts the flows of migrants will increase due to crop failure and the inability of vulnerable populations to adapt to a changing climate (Klepp 2017).

As crop yields continue to decline and displacements increase, rural to urban migration is on the rise. As a result, rapid urbanization, or sharp increases in population in urban areas, is occurring which increases competition for housing and, in return, increases housing prices (Tacoli et al 2015). In addition, as evidenced by Henrici and Shaw's study (2015), as climate disasters increase, women and single-mother households displaced by such events are forced to

resettle elsewhere. For those without the ability to move closer to family, the process of starting over in a new city without a support system increases the vulnerabilities created by displacement and makes recovery even harder. Urban areas with a lack of affordable housing and without strong community safety networks are associated with high incidents of housing insecurity and homeless residents. Based on these studies, the literature shows a relationship between climate change and homelessness due to displacement and increased housing costs. Those most impacted by these increased costs are women and single-mother households (Henrici & Shaw 2015).

Increased Food Insecurity and Malnutrition

Along with migration and housing security, food security is also impacted by declines in farm yields. Climate change is expected to increase world food prices 30 percent to 50 percent in the next few decades and increase food prices by 84 percent by 2050 (Pachauri & Meyer 2014). Social issues, such as food insecurity and affordable housing, increase and become more complicated in the presence of a changing climate. Accordingly, climate change is considered the greatest threat to food security for vulnerable populations (Wang 2010).

A study in 2013 found that "changes in food price may result in consumers changing their diets" (Bradbear & Friel 2013, p. 64). If the price of healthy food increases, less healthy food may be substituted by those who cannot afford to pay the higher price. This will impact vulnerable populations the most, particularly those living in food deserts (Bradbear & Friel 2013). Further, the lack of access to nutritional food exacerbates pre-existing conditions, which is tied to increased health issues, both physically and mentally (Bloem et al 2010). Women are especially sensitive to climate-driven food insecurity and malnutrition due to increased needs during menstruation, childbirth, and breastfeeding (Sorensen et al 2018). As a result, increased

food insecurity and malnutrition is most at risk in historically oppressed communities and those without the means to adequately adapt to climate change.

Access to Healthcare and Maternal Health Outcomes

The literature shows that access to safe housing and nutritious food is vital for good overall health and a lack of access to housing and nutritional food exacerbates pre-existing conditions, which is tied to increased health issues, both physically and mentally. The World Health Organization published a robust framework on the social determinants of health in 2008, which evidences that "socially determined factors that influence health outcomes include rapid and often adverse social, economic and demographic changes that affect working conditions, learning environments, family patterns, as well as the culture and social fabric of communities" (WHO 2008, p. 9). The connection between social structures and health outcomes is more pronounced for women because "social determinants of health contribute significantly to premature death and diseases particularly among vulnerable groups such as women" (WHO 2008, p. 8).

As climate change increases infectious disease, allergies, and heat-related illness, women are most impacted, particularly pregnant women. A study connected in 2018 concluded that pregnant women, or those trying to become pregnant, are one of the most at-risk groups to the Zika virus and that "temperature is a strong driver of vector-borne disease transmission" (Tesla et al 2018, p. 5). The study explored the relationship between temperatures and the ability for mosquitos, which transmit disease, to live longer and to travel to warming regions previously unsuitable for insects to survive and concluded that climate change increases the transmission of Zika and, therefore, the risk of infection for pregnant women (Tesla et al 2018).

As climate change increases health problems, it also creates additional risk for health care facilities due to extreme weather events. Extreme weather events can impact access to healthcare facilities and the delivery of care. This can lead to disruptions in care and poorer health outcomes for individuals who have limited options for care (Paterson et al 2014). Extreme weather events can impact access to healthcare facilities and the delivery of care. This can lead to disruptions in care and poorer health outcomes for individuals who have limited options for care. Extreme weather events impact the delivery of services at hospitals in the days and weeks following an extreme weather event, due to collapsed infrastructure and scarcity of resources and staff. Communities on the frontlines of climate change already face many challenges in accessing healthcare. In addition, maternal health outcomes tend to be lower in these same communities. Higher occurrences of extreme weather and climate events increase the vulnerabilities already present within healthcare systems, particularly for maternal health outcomes for women and young girls.

Increased Vulnerability and Intimate Partner Violence

In addition to increased poverty and displacement, climate change can also increase violence for women and young girls. Women experiencing poverty tend to be more vulnerable to sexual exploitation and domestic violence. Research shows that "women and girls are at a higher risk of physical, sexual, and domestic violence in the aftermath of disasters" (Sorensen et al 2018, p. 2). This is because disasters, displacements, and income-related stress positively correlate with an increase in intimate partner violence (Enarson 2012). When extreme weather events occur, women experiencing intimate partner violence likely have fewer options to leave violent or unhealthy relationships due to the eroding of community networks and a lack of income and resources. Climate change can exacerbate domestic violence and sexual exploitation

because it removes safety nets and cuts victims off from networks that served as a safety check for women and children living in abusive or unhealthy environments. Unsafe weather conditions, infrastructure breakdown, and emergency declarations create additional challenges for victims of domestic violence to reach shelters, access a phone, or ask for help from family, friends, or community social workers. Further, extreme weather events that disrupt living situations can also lead to desperation and uncertainty, particular for single-income households. This could lead to women voluntarily remaining in an abusive environment due to limited options of relocating with family or friends during an emergency declaration (Whittenbury 2013).

Along with intimate partner violence, studies show that climate change increases the sex trafficking of women (Sheu et al 2021). This is partly due to increased isolation from and erosion of community networks from climate events and partly due to more women entering sex work voluntarily due to limited options for work or housing after being impacted by an extreme weather event. As displacements, migration, and service disruptions increase due to climate disasters, vulnerability to human trafficking also increases. Research evidences the relationship between unstable housing and unemployment with involuntary and voluntary entry into sex work. Once a woman enters sex work, the cycle of poverty becomes more pronounced as an increased dependency on others emerges and socioeconomic power declines (Gerrard 2017).

Gaps in Existing Literature

The literature provides a strong overview of the inequitable distribution of climate impacts. Because the consequences of climate events are influenced by societal structures, climate change disproportionately impacts historically oppressed populations, those least responsible for carbon emissions and least equipped to adapt to a changing climate. When an emergency declaration is made, communities without resources to evacuate or relocate are more

affected than communities with resources to leave disaster-affected areas. In addition, the consequences of climate change, such as extreme flooding, wildfires, failing crops, and infectious disease, are felt more strongly by communities that are already experiencing food insecurity, housing insecurity, and low socioeconomic status. Climate change not only creates new problems for historically oppressed communities, but it also exacerbates current vulnerabilities. As a result, low-income, single-mother households are most impacted by human-caused climate change. A review of the literature in 2017 found that "a growing and interdisciplinary body of research has established that gender is an integral feature of social transformations associated with climate change. Gendered vulnerability to climate change is not due to characteristics intrinsic to women as a group. Rather, the social organization of women's reproductive and productive labor in different socioeconomic and cultural circumstances shapes the immediate 'factors' (e.g., poverty, education, property, and income sources) associated with women's higher risks and climate change-related burdens" (Pearse 2017, p. 12). However, the impact of a changing climate on the unique needs of women, particularly access to reproductive healthcare, maternal health outcomes, and child-rearing, is missing from the literature. The relationship between climate change and additional barriers to full bodily autonomy is not well-researched or well understood.

Chapter 1, Section II: Reproductive Justice and Bodily Autonomy

The disproportionate impacts of climate change to women infringes upon the principles of reproductive freedom and full bodily autonomy. The reproductive justice framework provides a set of principles to examine the unique impacts to women from climate change: the right to bodily autonomy, the right to not have a child, the right to have a child, and the right to raise a

child in a healthy environment (Ross & Solinger 2017). Any barrier infringing upon these rights is an attack on full bodily autonomy and considered a reproductive injustice. These principles are discussed through a summary of American slavery and the origins of gynecology, eugenics and reproductive coercion, case law, the reproductive justice movement, the theory of intersectionality, relative autonomy, and continued bodily autonomy regulation.

American Slavery and the Origins of Gynecology

A long history of reproductive injustice is linked to American slavery. Because enslaved men and women were considered property of their slave owners, they were stripped of all autonomy, including control over reproductive choices and the well-being of their children. Enslaved women were often forced to give birth to multiple children as a method of replenishing the slave owner's property (Roberts 1999). As a result, many enslaved women suffered from complications due to obstructed childbirth. One such complication was a vesicovaginal fistula, a common 19th-century complication of childbirth in which a tear between the uterus and bladder causes urine leakage and infertility. At the time, there was not a cure for vesicovaginal fistula which caused slave owners to become increasingly concerned over the loss of an enslaved woman's ability to provide them with new property (Pumphrey 2014).

J. Marion Sims, an affluent white man and doctor, began experimenting on enslaved Black women to pioneer a surgical method to repair vesicovaginal fistulas. From 1845 to 1849, Sims perpetuated many of the first incidents of reproductive injustice documented in the United States by performing dozens of experimental surgeries on at least twelve Black women without the use of anesthesia. While anesthesia was available at the time, Sims did not provide anesthesia to the women due to his racist belief that Black people do not feel pain. Sims eventually mastered the surgery, cured vesicovaginal fistulas, and became known as the father of

gynecology (Pumphrey 2014). It is here that the relationship between consumerism, property, and reproductive injustice is first introduced.

Eugenics and Reproductive Coercion

Throughout American slavery and after, incidents of reproductive injustice in the United States and around the world continue. The United States has a long, violent history of reproductive coercion, forced sterilization, and reproductive experimentation on historically oppressed communities. Beginning in the late 1800s, the eugenics movement provided the foundation for over a century of forced sterilizations of those deemed to possess undesirable physical or mental characteristics (Roberts 1999). When contraceptive pills were introduced in the 1950s, a public housing project in Puerto Rico was selected for the first large-scale human trial. Between 1929 and 1974, North Carolina's Eugenics Board sterilized close to 7,600 people, the majority of whom were low-income, Black women. From 1970 to 1976, up to fifty percent of Indigenous women living in the United States were sterilized, often without their consent. These incidents of reproductive injustice were fueled by racism and consumerism, as well as public policy (Ross and Solinger, 2017).

In 1927, the Supreme Court of the United States ruled in *Buck v. Bell* that compulsory sterilizations are constitutional. The case stemmed from the state-mandated sterilization of a young woman named Carrie Bell by the State of Virginia. Bell was institutionalized after the state determined her to be "feeble-minded," which resulted in her sterilization. While explaining his support for the Virginia state law, Supreme Court Justice Oliver Wendell Holmes declared that "three generations of imbeciles is enough." Following the historic ruling, the next five decades saw a mass sterilization of up to 70,000 people in the United States, mostly the poor and people of color. Ironically, these incidents of reproductive injustice collided with the start of the

reproductive rights movement and, in many ways, were exacerbated by pro-birth control advocates (Roberts 1999).

The intersection of the eugenics and the reproductive rights movement began in the 1920s. Margaret Sanger, a pro-birth control advocate, eugenicist, and founder of Planned Parenthood, advocated for racial betterment through the increased use of birth control methods. Following the success of her birth control clinic in Harlem, Sanger founded the Negro Project, which operated from 1939 to 1942. The project paraded itself as a provider of education for communities with limited resources, while targeting low-income Black communities located in the rural South for the distribution of birth control. Critics of the Negro Project highlight Sanger's methods as a form of reproductive coercion to discourage poor Black communities from reproducing. The same birth control celebrated for liberating affluent white women from unchosen reproductive destinies was weaponized to control the reproductive choices of poor communities and Black women (Roberts 1999).

At the end of 1990, the Food and Drug Administration approved Norplant, the first subdermal implantable contraceptive device, to prevent pregnancies for up to five years. As a result, Norplant was used by policymakers, judges, social workers, and nonprofit organizations to coercively sterilize low-income communities and communities of color by mandating the use of Norplant for welfare recipients (Roberts 1999). Between the years 1991 and 1992, fourteen states passed laws tying Norplant to welfare benefits, all with a goal of reducing the number of children born to parents receiving Welfare benefits. In addition, since the device could only be implanted and removed by a doctor, lawmakers further incentivized Medicaid recipients by authorizing Medicaid to only cover the removal of the device at the end of the five-year period. Years later, the harmful side effects of the birth control device were discovered, and Norplant

was taken off the market, but not before causing irreparable harm to many poor and minority individuals, including infertility (Licata 2020).

Landmark Cases for Reproductive Freedom

While *Buck v. Bell* has not formally been overturned, reproductive freedom has celebrated several victories over the past seven decades. The 1965 Supreme Court decision in *Griswold v. Connecticut* struck down a state prohibition against the prescription, sale, or use of contraceptives and held that the Constitution guarantees a "right to privacy" for married individuals in decisions around family planning. In 1972, unmarried individuals gained to right to birth control in *Eisenstadt v. Baird*. In 1973, the landmark abortion rights case, *Roe v. Wade* was decided, legalizing all abortions up to the point that a fetus is determined viable. However, while these victories for the reproductive rights movement took center stage, incidents of reproductive oppression continued, particularly for those in low-income households and without access to funding for healthcare.

In the 1980 case of *Harris v. McRae*, the Supreme Court rejected a challenge to the Hyde Amendment, which, since being adopted by Congress in 1976 and amended in 1993 to add additional exceptions, bans the use of federal Medicaid funds to cover abortion except in incidents when the mother's life is in danger or in cases of rape or incest. In the 1991 case of *Rust v. Sullivan*, the Court also upheld the gag rule, which was adopted in 1984 to prohibit abortion counseling and referral by family planning programs funded under Title X of the federal Public Health Service Act. In 1992, reproductive freedom was dealt another blow in *Planned Parenthood of Southeastern Pennsylvania v. Casey.* Although the Court preserved constitutional protection for the right to choose, it adopted a weaker test for evaluating restrictive abortion laws. Under the new undue burden test, state regulations on abortion are allowed if they do not

place a substantial obstacle in the path of a patient seeking legal abortion. However, what is considered substantial is left for interpretation. This has resulted in increased barriers to care impacting mostly the poor and women of color (Roberts 1999). Accordingly, the scope of historical reproductive freedom cases is limited and lacks a holistic approach to liberation for those who are most oppressed in their reproductive choices, particularly low-income women and women of color.

The Birth of the Reproductive Justice Movement

To fully understand what constitutes reproductive injustice, one must first understand how to recognize reproductive justice. In June of 1989, while white feminists led the reproductive rights movement, centering white women's issues and exacerbating the oppression of marginalized women, over 1,500 Black women gathered at Spellman College in Atlanta, Georgia. It was the first national conference on Black women's health issues in response to centuries of reproductive oppression experienced by Black women and the communities they represent. While the rallying call to remediate women's reproductive oppression was not new, the women's movement historically focused on white women's issues and forced Black, Indigenous, Hispanic, and queer women's issues to the side (Ross et al 2016).

White women had taken up the torch against patriarchy while leveraging the power of white supremacy, capitalism, and purity culture to distinguish affluent, well-educated, cisgender, heterosexual white women from others. Because the women's movement is largely controlled by affluent white women, the injustices of population control and forced sterilization are not an agenda item. For centuries, Black women suffered the most from reproductive oppression and yet were excluded from organizing around reproductive rights. The irony of this was not lost on those who gathered in Atlanta during the Summer of 1989. The conference led to the creation of

the National Black Women's Health Project, which laid the foundation for what would become an organizing framework developed by women of color for women of color. Five years later, a group of Black women gathered in Chicago to develop the reproductive justice framework in response to the Clinton administration's healthcare plan. The Women of African Descent for Reproductive Justice launched the new framework by publishing a full-page statement in the Washington Post critiquing Clinton's plan. The statement was titled "Black Women on Universal Healthcare Reform" and it included over 800 signatures. Three years later, these women joined fifteen other women-of-color-led organizations to form SisterSong and build the reproductive justice movement (Ross et al 2016).

The reproductive justice framework is built around the idea that Black women's reproductive oppression cannot be separated from the economic and social injustices they experience. Reproductive justice reimagines reproductive rights through the experiences unique to Black women and their communities. The framework recognizes that reproductive freedom cannot be realized without addressing the interlocking systems of oppression, such as poverty, racism, homophobia, police brutality, sexual violence, and pollution that prevent women, especially low-income women and women of color, from controlling their bodies. Reproductive justice emphasizes reproductive control. This includes access to abortion and the right to have a healthy child and raise children in a safe and sustainable environment. The reproductive justice movement shines light on the reproductive violence Black women have experienced through not only forced birth, but also forced sterilization. At the core of the reproductive justice framework is the acknowledgment that the ability to choose does not always equate agency and liberty if the constraints under which one is presented choices remain intact and unaddressed. Indeed, full

bodily autonomy is not possible if the only choices available are rooted in oppression (Ross & Solinger 2017).

A Case for Intersectionality

Reproductive injustice intersects with several other social justice frameworks to recognize the barriers to nutritious food, safe housing, a clean, healthy environment, or anything that obstructs the right to full bodily autonomy or the right to freely choose to have a child, to not have a child, or to raise a child in a healthy environment. The concept of intersectionality was first introduced by Kimberlé Crenshaw within the context of the reproductive justice framework. Intersectionality seeks to explain how identities based in race and gender intersect within systems of oppression. Intersectionality demands that these identities cannot be separated since those who embody them cannot separate their experiences tied to each (Crenshaw 1990). When applying the concept of intersectionality to reproductive freedom, the importance of women's economic, social, and political power to make decisions about their bodies and their families is understood. Accordingly, the environmental impacts of climate change on women and young girls cannot be separated from their reproductive needs and desires. The health and prosperity of a woman's body and fertility is so intrinsically linked to climate that one cannot adequately address the vulnerabilities of one without addressing the burdens of the other. By applying the theory of intersectionality to climate change, one can better understand the relationship between climate and reproductive injustice.

Relative Autonomy

Bodily autonomy is an essential ingredient in reproductive freedom. Where there is reproductive justice, there must be the protection of full bodily autonomy. As researcher Elizabeth Wick writes, "The principle of autonomy is an important foundational concept for the

law of human rights, alongside principles of equality and dignity" (Wicks 2016, p. 6). However, defining what autonomy means is less clear. Traditionally, bodily autonomy is defined as the right to live by one's own law. To achieve bodily autonomy, one must possess both agency and liberty. The concepts of agency, or the ability to make a choice about the body, and liberty, or the ability to freely act based on one's autonomy, have long been debated. The concept of bodily autonomy was first introduced as an expression of self-determination and, at times, isolation from harm. This traditional approach to autonomy centers the quest for full bodily autonomy around personal property and the right to control and protect one's property. The reproductive rights movement is built around the traditional approach to bodily autonomy, or an individual's right to choose how to live. While this may appear to benefit all of society, critiques of the traditional approach point out that individuals are not isolated from those around them and, therefore, the dynamics of relationships should be considered within the concept of autonomy (Wicks, 2016).

In 1989, the same year the National Black Women's Health Project was founded, the idea of relative autonomy was introduced by Jennifer Nedelsky. Rejecting the traditional theory of bodily autonomy rooted in isolation, Nedelsky advocates for a new framework to govern the concept of autonomy with a focus on relationships, interdependencies, and intersectionality. Nedelsky argues that if property is the perfect symbol for the traditional definition of autonomy, childrearing symbolizes relative autonomy. The relationship of autonomy between parent and child, particularly the ability of the parent to foster or hinder the autonomy and the well-being of the child, is the perfect model for relative autonomy. Nedelsky emphasizes the importance of power dynamics within relationships and the impact to individual bodily autonomy (Nedelsky 1989).

Nedelsky draws parallels from the parent and child relationship to the dynamic between governments and citizens. Relative autonomy illustrates the role of public programs, policymakers, and community organizations in fostering or hindering the autonomy of individuals. Nedelsky's concept of relative autonomy is a facet of reproductive justice. The emphasis on collective action and participation in the democratic process as a central part of autonomy parallels how the underrepresentation of women in positions of power contributes to reproductive injustice (Nedelsky 1989). Relative autonomy's demand for the collective responsibility of the well-being of all individuals and communities intersects with the reproductive justice framework, particularly the framework's goal to identify the commonality of oppressed women's experiences and to adopt new policies to end that oppression.

The application of autonomy in feminist theory is diverse. However, a few common themes are woven through all the varying viewpoints: anti-individualism, anti-dualism, and the conatus doctrine. All three ideas in the context of autonomy are best explained by borrowing the views of the philosopher Spinoza. Spinoza believed that individuals "are connected by a web of causal relationships governed by natural laws from which [they] cannot escape" (Sharpe 2021, p. 424). In accordance with this theory, experiences of an individual living in a society cannot be explained in a vacuum and, therefore, autonomy cannot be defined in isolation. In addition, Spinoza's rejection of Cartesian dualism acknowledges the unique experiences of women. The Cartesian doctrine views the body and mind as separate, with an emphasis on the mind for freedom and on the body for servitude. Most feminists reject dualism when defining autonomy due to the irrational annulment of the relationship between the female mind and body, such as the experiences of menstruation, pregnancy, and menopause. Last, Spinoza's conatus doctrine acknowledges that feminists seek to understand how patriarchal systems encourage, restrict, and

influence individual desires (Sharpe 2021). At the core of this idea is the belief that "the universal striving for self-preservation serves also as a kind of natural pressure upon the state to satisfy the psychic needs of its constituents to belong, to be recognized as worthy of esteem, and thereby to find life livable" (Sharpe 2021, p. 427).

Continued Regulation of Bodily Autonomy

While laws exist to protect autonomy and liberty, particularly in medical law, government regulation of bodily autonomy continues. Current law governs the use of an individual's body in different forms, such as access to abortion care, surrogacy, choices about dying, organ donation, drug use, nudity, and prostitution. Regulation of bodily autonomy is motivated by both formal and informal institutions, including patriarchy, capitalism, white supremacy, and purity culture. However, the personhood theory and the no harm doctrine are most influential in autonomy regulation. The personhood theory governs who is considered a person with autonomy and when. The no harm doctrine establishes a standard that bodily autonomy should only be limited to protect against harm to other individuals (Wicks 2016).

Most recently, the regulation of bodily autonomy is implicated in conversations around climate change and population control. As a result, the concept of sexual stewards as a solution to climate change has emerged. A sexual steward is "a symbol of the ideal women framed within the logics of private, individual decision-making and choice, who adopts a modicum of embodied environmental responsibility in the service of global development goals, and who helps advocates weave together narratives of the urgency of simultaneously addressing climate change and empowering women around the world to use contraceptives" (Sasser 2018, p. 4). While population control is not a new concept, advocacy for increasing access to contraceptives to combat climate change, particularly in developing countries, has picked up popularity in

recent years. Reminiscent of Norplant and social policy of the 1990s, which also sought to limit the strain of excess dependents on the economy, pushing birth control on low-income communities comprised of mostly people of color reeks of reproductive injustice. Modern population control strategies are false solutions to climate change focused on "scapegoating those most vulnerable to environmental degradation and climate chaos, displac[ing] attention from root causes by obscuring the role of privileged, hyper-consumers, the fossil fuel industry, and green capitalism/racism in sustaining the current system" (de Onis 2019, p. 502).

Chapter 1, Section III: Green Criminology and Ethical Considerations

The term "green criminology" was first introduced by J. Michael Lynch in 1990 as a "variety of class related injustices that maintain an inequitable distribution of power while destroying human life, generating hunger, uprooting and poisoning the environment of all classes, peoples and animals" (Lynch 1990, p. 3). Since then, green criminology has expanded to include "the causes, consequences, and prevalence of environmental crime and harm, the responses to and prevention of environmental crime and harm by the legal system (civil, criminal, regulatory) and by nongovernmental entities and social movements, as well as the meaning and mediated representations of environmental crime and harm" (Brisman & South 2019, p. 1). In this Section, several lessons from green criminology are leveraged to analyze the impact of sexism, racism, and capitalism at the intersection of climate justice and reproductive justice and to discuss the ethics and public policy implications of each. These lessons emphasize a feminist reclaiming of full bodily autonomy for poor women and girls of color, given the health and social inequalities they disproportionately experience.

Lessons from Green Criminology

Green criminology is organized into two traditional approaches: the legal-procedural approach, which studies the causes of environmental crime based on violations of law, and the socio-legal approach, which studies environmental harm beyond statutory requirements. While both approaches seek to explain who or what is causing harm, the socio-legal approach expands the framework to address and understand the underlying motives behind why the harm is perpetuated. The socio-legal approach provides a suitable methodology to assess racism, sexism, and the exploitation of labor as criminal (Brisman & South 2019).

Green criminology encompasses a set of philosophies to explain the relationship between humans, nonhumans, and nature. The philosophy of anthropocentrism views humans as superior to nature and nonhumans. Biocentrism believes humans, nonhumans, and nature possess the same worth. Ecocentrism is "based on the idea that humans and their activities are inextricably interconnected with the rest of the natural world" (Brisman & South 2019, p. 5). The application of these philosophies is accomplished through three justice-based approaches: environmental justice; which demands the equal distribution of the benefits and burdens tied to economic, social, and scientific processes within a society; species justice, which recognizes the utilitarian value and rights of nonhumans; and ecological justice, which "stresses the interrelatedness of life: all living things are bound together and thus all environmental matters are intrinsically transboundary" (Brisman & South 2019, p. 6).

Lessons applicable to reproductive justice are derived from all three of these approaches. Environmental justice condemns the reality that frontline communities often suffer the worst impacts of climate change, while also being least responsible for the carbon emissions fueling a changing climate. Species justice illustrates how racism and sexism lead to discrimination and prejudice towards groups deemed inferior to others. Ecological justice highlights the importance

of intersectionality, the inability to compartmentalize the human experience, and the conflict between commodification and reproductive freedom (Brisman & South 2019).

The Role of Capitalism and Consumerism

The history of humanity is drenched in the commodification of land, resources, and the human body. This commodification, often paired with colonialism, which frequently is associated with genocide, is rationalized based on perceptions of necessity and economic growth. Yet, the concept of ecocide, which is the destruction of the natural environment through deliberant human behavior, is not universally accepted within the frameworks that govern genocide. An impressive body of literature is emerging to address ecocide and the relationship to "industrial capitalism, in which nature itself is commodified, [which] creates a tension in the pursuit of surplus, resulting in an escalation of consumption and environmental concerns" (Kalkandelen & O'Byrne 2017, p. 337). The literature showcases how the "interests of post-colonialism and modern corporate imperialism align in asserting that continual economic growth is sustainable and essential" (Crook et al 2018, p. 310). If societies continue to tolerate the environmental and social harm of industrial processes in the name of economic growth, capitalism and consumerism will continue to be two of the biggest drivers of social injustice.

The United States has a long history of accepting environmental degradation in exchange for prosperity. Pollution is so normalized in American culture that in the Fall of 1992, when the Environmental Protection Agency (EPA) sought to respond to public outcry over recent findings that low-income and minority communities are exposed to industrial pollution and toxic waste sites at a much higher rate than affluent and white communities, the EPA created the Office of Environmental Equity to remedy the unequal distribution of pollution and toxic waste. It would take another two years for the EPA to understand the difference between the equal poisoning of

all and justice from the poisoning of anyone. While the EPA changed the name of their new office to the Office of Environmental Justice in 1994, the acceptance of environmental harm as an inevitable occurrence that must be distributed demonstrates how deeply capitalism and consumerism is embedded within American society (Ewall 2012).

A Feminist Perspective

In contrast to capitalism, Marxist ecology and eco-feminism reject the notion that continued economic growth is sustainable and essential. Rather, Marxist ecology argues "the dehumanization of human beings…is produced by the capitalist mode of production" (Kalkandelen & O'Byrne 2017, p. 337). Marxist ecology believes that the ecological crisis and social injustice are interconnected, and eco-feminists agree, paralleling sexism with environmental degradation through the analysis of society's exploitation of both women and nature. Ecofeminism was introduced in 1974 by Françoise d'Eaubonne and calls for a collaborative society, with no dominant group (Zein & Setiawan 2017). Eco-feminists explore how the institutions of race, gender, and power contribute, individually and collectively, to both the oppression of women and the destruction of nature. Like Marxist ecology, eco-feminists argue that the human body cannot be separated from nature, creating an axiom at the intersection of women's oppression and a dying planet (Kalkandelen & O'Byrne 2017). Eco-feminists further highlight the importance of women as decision-makers in decoupling carbon emissions from economic growth (Ergas & York 2012).

The relationship between gender inequality and environmental degradation is well-supported by the literature. A 2020 fixed-effects panel regression model assessed the relationship between carbon emissions and economic growth at varying degrees of gender inequality. The study found that "…increasing gender inequality in both developed countries and less developed

countries leads to a tighter coupling between economic growth and CO_2 emissions [but] the association of gender inequality on the relationship between economic development and CO_2 emissions is much stronger in less developed countries" (McGee et al 2020, p. 263). Building upon previous research that inversely correlates women's political status and carbon emissions, the literature concludes that increasing gender equality may lead to curbing climate change (Ergas &York 2012). These findings raise the question of who is best suited to address and remedy incidents of injustice.

Assessing criminology through a feminist lens parallels many of the concepts previously discussed. For example, feminist criminology is "a paradigm that studies and explains criminal offending and victimization as well as institutionalized responses to these problems as fundamentally gendered" (Ranzetti 2018, p. 76). At the root of feminist criminology is the acknowledgement that the experiences, behaviors, and desires of women have largely been excluded from traditional approaches to criminology, mainly due to patriarchy. Further Marxist feminism, as opposed to liberal feminism, emphasizes the role of social class and, therefore, the role of capitalism, in the oppression of women (Ranzetti 2018). These lessons from green criminology and feminist theory demand a feminist reclaiming of full bodily autonomy for poor women and women of color through the reevaluation of positions of power.

Public Policy Implications

The public policy implications of climate change, environmental racism, sexism, and the exploitation of laborers are complicated; consensus is not often reached. However, the frameworks discussed in this paper propose a series of solutions to lessen and remedy the social injustices connected to each. From green criminology, policy solutions must begin with "learning from—or endeavoring to understand—previous mistakes and omissions, as well as anticipating

future risks and threats" (Brisman & South 2019, p. 3). Further, "a green criminology concerned with the creation of effective systems for the administration of environmental justice should be supporting a proposal to introduce into international law new measures to address contemporary ecocidal trends" (Crook et al 2018, p. 302). From an ecofeminism perspective, remedy resides in a power shift to provide better representation within the policymaking process of those most impacted by social injustice. "Women play a vital role in the societal response to climate change; their participation at all levels has been shown to result in greater responsiveness to citizens' needs and often increases in cooperation across party and ethnic lines, generally resulting in sustainable outcomes" (Sorensen et al 2018, p. 5).

The lessons from green criminology, ecofeminism, and relative autonomy combine to strengthen the pursuit of full bodily autonomy. However, the conclusions drawn from each are rooted in oppressive systems. Green criminology ignores the unique experiences of women and builds its theory upon a man's perception. Ecofeminism and relative autonomy embrace the vital role gender and social class play in oppression but largely ignore the role of race. Ecofeminists advocate for increased access to contraceptives but the notion that all women are liberated through population control is based on the perspective of affluent white women. Nedelsky's (1989) assertion that bodily autonomy is best achieved through stronger relationships and collaboration is driven by someone who does not experience systemic racism present in a society. While reproductive justice revolves around the theory of intersectionality, the importance of relative decision-making is downplayed in the framework, focusing on the right to achieve reproductive freedom but without a standard to determine when those rights are fulfilled.

While a rich and complex body of literature evidences the detriment to women and low-income communities from a changing climate, the knowledge of this harm does not motivate

policymakers to act. With most policymakers as white affluent men who are not substantially impacted by climate change, those making policy decisions do not understand the unique needs of those most impacted by a warming planet or appreciate the urgency to act. As such, the power dynamics within formal and informal institutions sustain the barriers to full bodily autonomy for individuals with lower socioeconomic status. Further, remediation of this injustice through the traditional approach to autonomy falls short. With the traditional approach to autonomy focused on self-determination and protecting one's property, policymakers are persuaded to protect their own property to preserve their own autonomy in isolation. As a result, sustained gender inequality not only perpetuates oppression of marginalized communities and environmental degradation, but it also protects the bodily autonomy of those in power.

To truly achieve full bodily autonomy, individuals must be able to decide what that means for their body. Missing from the literature is the following tenet: *The right to decide when full bodily autonomy is achieved depends on and is derived from one's lived experience*. While the lessons of the previously discussed frameworks bring us closer to full bodily autonomy, the lived experiences of those most marginalized must be prioritized to realize reproductive freedom. Indeed, absent a similarly lived and shared experience, it is not possible for others to genuinely understand the unique needs of those who experience differently, nor is it ethical (e.g., equitable, good) for others to decide how to remedy an injustice that does not impact them (Young 2011). Green criminology, ecofeminism, and relative autonomy must ground their theories in reproductive justice. Without the right to decide when full bodily autonomy is achieved based on group differentiated experiences, the doctrine of full bodily autonomy will continue to be exploited by those in power to protect their own property and disregard the most vulnerable.

Chapter 1 Conclusion

Full bodily autonomy and the right to choose to have a child, to not have a child, and to raise a child in a healthy environment is vital for equitable communities. Preventing and mitigating the impacts of climate is important for healthy communities. In confronting climate change and reproductive injustice, policy solutions must consider the interdependencies and intersections between the two to address the root causes of both. The refusal to tackle the causes of climate change is, in part, due to who is most impacted by climate change. Women have historically experienced oppression, particularly within the communities on the frontlines of climate change, along with having their unique healthcare needs ignored when compared to the population at large. Several examples exist of this phenomenon, from safety testing of automobiles that ignore the smaller stature of women to the development of vaccines that ignore interactions with birth control. Thus, the reclaiming of bodily autonomy through the lived experiences of poor women and women of color is essential for reproductive justice to be realized. The refusal to put forth effective policy solutions to solve and mitigate climate change impacts – given those who are most harmed by these effects – is an ethical dilemma.

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Chapter 2: *Decolonizing Feminism: A Critique of White Feminism, Corporate Colonialism, and the Rise of "Girlbosses"*

Introduction

In 1963, Betty Friedan's iconic work *The Feminine Mystique* invaded the book clubs, nightstands, and minds of American housewives. In it, Friedan argued that, like a man, a woman's identity is cultivated through a sense of achievement, primarily through a career, and a woman's pursuit of professional and personal fulfillment should not be stunted by traditional gender roles. Within only a couple decades from the book's release, the white affluent housewife, who appropriately performed her domestic and reproductive duties and was hailed by the West as the envy of women throughout the world, would now be measured against a new standard, one that would eventually be projected on all women around the world: an empowered woman gracefully carries her reproductive and domestic labor while also attaining the same professional success and status of her husband.

More than fifty years later, in 2015, Sheryl Sandberg would publish her book *Lean In* and quickly develop a cult following of empowered women. Shortly after in 2019, Melinda Gates would release *Moment of Lift*, an ode to women empowerment through birth control and gainful employment for all women. Sandberg and Gates have long been lauded as advocates for gender equality and women's rights. However, these works, while widely popular, are examples of how women's liberation continues to be defined and measured by attaining the status and privileges afforded to affluent white men.

Critiques of the historical white woman-led charge for women's rights are not new. The literature is rich with testimonials and examples of how the women's rights movement focuses

on the experiences of affluent white women and ignores the needs of nonwhite women. Critical race feminists, most importantly Loretta Ross, Dorothy Roberts, and bell hooks, have long called for white women to acknowledge and condemn their role within the historical and ongoing silencing of nonwhite women. What is less understood, however, is how the movement not only ignores the needs of nonwhite women but also contributes to and sustains their oppression.

This chapter examines some of the early incidences of white feminism and corporate colonialism, and the resulting rise of corporate white feminists as high-paid influencers who contribute, although sometimes inadvertently, to the exploitation and ongoing colonialism of Indigenous women. Through recalling the historical legacy of settler colonialism, especially the exploitation of Indigenous women and their ongoing oppression, and by examining the role of corporate expansion and consumerism, this chapter aims to demonstrate how white feminists create and maintain corporate colonialism, and ultimately the colonization of Indigenous women.

Chapter 2, Section I: A History of Settler Colonialism

The ideologies of white supremacy, patriarchy, and capitalism pave the way for settlers to gain control over territories, nations, and people, founded on the perceived superiority of the white way of life and the expected financial benefits of investments in other countries. Colonialism can be divided into two broad categories: external colonialism and internal colonialism, with the former a method of resource extraction for chattel and the latter serving to police and manage land, people, and everything indigenous for the purpose of dominion by and assimilation to the white elite (Tuck & Yang 2021). Settler colonialism throughout North America accomplished both goals, along with establishing the concept of prosperity within a capitalist culture.

Throughout the history of the North America, prosperity, as defined in the Western context, has often been tied to the othering of cultures and peoples that threaten capitalism. As anthropologist James Morris Blaut, a staunch critic of eurocentrism, points out, "[It was obvious to many] that a Christian god would guide his people to civilization and modernity - and thus of course to capitalism" (1989, p. 260). While early colonizers believed that progress would come to non-European people only through the diffusion of European and Christian ideals, colonialism was inherently about the accumulation of capital. From gold and silver to leather, cloth, and spices, colonialism revolved around the flow of goods and labor, including the enslavement of Indigenous Peoples throughout the Americas (Blaut 1989). Thus, the history of capitalism can be traced back to the domination and exploitation of nature and cultures, particularly Indigenous women. This quest for wealth was often accompanied by rationalizations based in missionary work and driven by the Christian concepts of morality.

The Othering of Indigenous Peoples

Beginning in the 1500s and continuing for more than two centuries, colonial agents in what is now the United States and Canada convinced themselves and others that their mission was righteous by presenting Indigenous women as people who were either fragile and needed saving or who were violent and needed controlling. Colonial agents portrayed Indigenous women as inferior, uneducated, unfit, and untamed. Not only did European colonizers bring with them their agenda to rape and pillage land, but they also overwhelmed tribal nations with their demand for female subjugation, forcing Indigenous women to fight to maintain their identities, often rooted in matriarchal tradition (Stevenson 1999). Further, settler colonialism brought fur traders and Christian missionaries both of whom were shocked when interacting with Indigenous women. Colonial agents viewed Native people's diverse practices of gender and sexuality as

primitivity (Morgensen 2010). They were used to the submissive, meek qualities of European women, not the strong, fierce qualities of many Indigenous women they encountered. The strong, independent nature of Indigenous women fueled the need for colonial agents to develop a strategy to dominate, control, and invalidate them.

As a result, colonial agents organized Native women into two broad stereotypes: an "Indian Princess" or a "Squaw Drudge," both of whom needed saving (Stevenson 1999, p. 57). Patriarchy, which often assigned to women feminine, domestic duties and encouraged them to pursue outlets within feminine creativity, such as painting, dance, and knitting, was thrust upon Indigenous women by colonizers. This led to colonized Indigenous women being excluded from what colonial agents deemed masculine duties, such as voting or participating in decisions related to the management of their land. Many Native women lost the freedom and autonomy they were accustomed, including the right to own property or initiate divorce proceedings (Stevenson 1999). Indigenous women, many of whom were highly respected leaders in their communities, were stripped of their power and status through confinement and reeducation.

During the second half of the 1700s, Spanish missionaries and priests arrived in what is now California with a mission to "denaturalize" and "humanize" Indigenous Peoples referred to as savages (Teran 2016, p. 20). Young girls and women were captured and taken from their homes by Spanish soldiers and held in monjeríos, which were large buildings similar to prisons that served as "a site of gendering and racialization" (Teran 2016, p. 21). Native women were routinely tortured, shamed, and sexually assaulted at the hands of the Catholic Church in an attempt to control their sexuality and perceived immorality. Further, by 1900, both the United States and Canada established more than twenty government-run Indian boarding schools (Pegoraro 2015). The schools were used to reeducate and assimilate Indigenous children to

remove all signs of their culture, along with punishing those who held on to their customs and beliefs, including any parent who refused to send their children to the boarding schools (Ross 2016). Stories of crimes and horrors suffered at these residential schools are vast, from rape and torture to forced sterilization and death (Pegoraro 2015).

The Criminalization of Indigenous Culture

The California missions and government boarding schools served as some of the nation's first prisons through assigning deviance to nonwhite, non-Christian behaviors and controlling the movement of nonwhite populations. Boarding schools and federal policies, such as the pass system which required anyone leaving the reservation to receive a pass from the Indian agent and criminalized those caught without one, controlled both the physical and cultural movement of Indigenous Nations across North America. This resulted in not only Indigenous Peoples being contained, but also removed from their land, which when left unattended increased the opportunity for the land to be seized by settlers. The beginning of the disproportionate incarceration of Indigenous Peoples in the United States and Canada can be traced back to this era of criminalization and confinement of Indigenous culture and ideas. As sociologist Luana Ross (2016), a member of the Confederated Salish and Kootenai Tribes, explains, "a thorough understanding of Native criminality requires tracing the evolution of federal policies, the process of being made deviant, and the politics of confinement" (p. 3).

In 1862, the largest mass execution in the history of the United States took place during the Civil War at the order of President Abraham Lincoln. The order, of which sanctioned the execution of 38 Dakota men, was a cruel conclusion to the Dakota War of 1862, which sparked a series of Indian wars between the First Nation tribes and the United States military through 1890 (Martinez 2013). However, the underlying cause of the conflicts began over ten years prior

when, beginning in 1850, the culture, customs, and lifeways of the Dakota began to decline due to being pushed off their native land and forced to assimilate to the white settler state (Tallbear 2016). During the 1850s, when promises made to First Nations for control of their land by the American government went unfulfilled, treaties were once again negotiated. The new treaties, driven by the demand of policymakers for tribes to make way for economic expansion and progress, reduced the Dakota's land by half, decreasing their hunting ground significantly and resulting in many of the Dakota going hungry. The decreasing quality of life of the Dakota ultimately led to armed conflict with settlers, the defeat of the Dakota by the American military, over 300 Dakota men sentenced to death for their participation in the war, over 1600 women, children, and elderly Dakota confined to concentration camps, with hundreds more dying at the camps from illness and disease, and a cry by the Governor for all Indian in what is today Minnesota to be exterminated (Martinez 2013).

By 1863, the American government passed a law that annulled all treaties with the Dakota and took control of all of their land. Shortly after, a second law was passed to expel not only the Dakota from Minnesota and their ancestral homelands, but all Indigenous Peoples, including the Ho-Chunk, who had not participated in the Dakota War but whose land was deemed by colonial agents to be pristine agricultural terrain (Martinez 2013). Spanning three decades and hundreds of miles across the Great Plains, from the Dakota War of 1862, the 1863 massacre at Bear River in Idaho, and the 1864 massacre at Sand Creek in Colorado to the 1890 massacre at Wounded Knee in South Dakota, the Indian wars are often overshadowed in history books by tales from the Civil War, which coincidentally took place at the same time, that often erroneously paint the North as the more humane side (Martinez 2013).

Yet, the criminalization and imprisonment of tribal nations went beyond physical constraint to not only control the movement of Indigenous Peoples but to also oppress Indigenous languages, customs, and spiritual practices. The Nez Percé tribe, who has lived on the Columbia River Plateau for centuries, has a word for imprisonment that literally means darkness, illustrating how for the Nez Percé, and many other tribal nations, imprisonment is not a place, it is a condition (Ross 2016, p. 4). Settler colonialism not only physically removed and displaced tribal nations from their land, but also forced Native cultures underground. As a result, many Native women (and men) became afraid of teaching their children their language, customs, and rituals for fear of violence from colonial agents. Further, the colonial discourse that continues into modern times often "conflates racialized terrorists with sexual perversion [to] uphold the heteronormativity of white citizens as in need of enhancement or defense," which only further sustains the settler state (Morgensen 2010, p.105). Therefore, the confinement, rape, and erasure of Indigenous Peoples through criminalization and incarceration continues today as a form of ongoing settler colonialism not only through controlling the physical movement of tribal nations, but also through a mental, spiritual, and emotional condition of oppression and exploitation.

Weaponizing Public Policy to Control First Nations

The rapid population decline of Indigenous Peoples that began in the 1700s and continued throughout the 1800s can be traced to a number of historical events, from violent colonial practices and the spread of infectious disease to government interference and isolation. For more than three centuries, Indigenous Peoples were victims of not only war and violence but were also often stripped of their ability to reproduce. For example, in the United States, the California missions and Indian boarding schools saw a sharp decline in fertility rates among the Native women housed there due to the poor living conditions, infectious disease introduced by

their European educators, and a lack of adequate medical treatment (Teran 2016, p. 23). In addition, continuing throughout the twentieth century and throughout North America, Native women, of whom were both ill and healthy, were often confined to government hospitals where they experienced unimaginable violence and inadequate health services, often resulting in their infertility or death.

In Canada, the Department of Indian Affairs forced many Indigenous women into Indian hospitals based not on disease or illness, but on their Indian status in an attempt to control and assimilate them. Many stories of healthy Indigenous women being used to test experimental drugs and procedures, along with undergoing electroshock therapy and sterilization without their consent or knowledge, emerged during the second half of the 1900s. In addition, Indigenous women who were battling an illness did not receive proper care at government hospitals but were also not allowed to leave. Further, in 1953, the Canadian Indian Act was amended to make it a crime for an Indigenous individual to refuse to see a doctor or leave a hospital before being officially discharged (Lux 2016). As a result, Indigenous women not only experienced unimaginable trauma and terror at the hands of colonial agents disguised as medical care, including being beaten or shocked to death or left in isolation to die, but faced yet another mode of criminalization for merely existing.

Like Canada, the United States leaned on federal policy to assist with the management of tribal populations. During the second half of the twentieth century, Indigenous populations began to rebound. In 1970, the United States Census showed the average Native American woman bore 3.79 children compared to 1.79 children for all other groups in the United States (Pegoraro 2015). Soon after, the Population Research Act of 1970 was passed and led to Indigenous women throughout the United States being targeted for birth control and sterilization, often

without their knowledge or consent (Carpio 2004). Following centuries of violent removal, displacement, and relocation, many Indigenous Nations struggled with poverty and looked to Indian Health Services (IHS) for health care. However, medical records show that IHS often abused authoritative positions of power and language barriers to manipulate, force, and deceive Indigenous women into sterilization procedures as the government viewed birth control and sterilization as a method of controlling government dependency. In 1979, Lehman Brightman, a member of the Great Sioux Nation and founder of United Native Americans, found that 42 percent of Native American women, equating to around 60,000 to 70,000 women, had been coercively sterilized by physicians in partnership with IHS. By 1980, the average number of children born to Native American women dropped to 1.3 (Pegoraro 2015).

As previously discussed, the widespread reproductive injustices experienced by Indigenous women was exacerbated by white women and the reproductive rights movement who advocated for women's sexual liberation and increased access to contraceptives, along with policymakers and eugenicists who advocated for policies that tied compulsory birth control to welfare benefits in an effort to decrease birth rates amongst low-income communities of color. Birth control advocates gained momentum for not only advocating for white women's ability to control their fertility but also for impoverished mothers to stop reproducing. While forced sterilization and social policy of the 1900s may be criticized today as a form of reproductive coercion to discourage poor communities from reproducing, many modern progressives and economists continue to push birth control and the regulation of fertility as a method to address poverty, improve the welfare of humanity, and advance economic progress for the white elite.

Today, white settler states continue to rationalize the confinement and subjugation of Indigenous women. Further, while the history of Spanish missions and government boarding

schools may be largely condemned and considered an injustice of the past, Indigenous women continue to resist the reeducation of their daughters by the settler state. For example, through Indigenous feminism, many Indigenous Nations contain matrilineal power structures with alternate concepts of gender identity and family roles; however, the patriarchal notion of womanhood continues to dominate most societies throughout North America, and Christian values are largely considered the norm by Western societies, which continues to dictate the modern understanding of morality. All these ideas and concepts, which directly contradict many of the traditions and beliefs of tribal nations, drive continued setter colonialism and the forceful confinement, sterilization, and reeducation of Indigenous women and their children as an ongoing structure, not an isolated event of the past.

Chapter 2, Section II: The Rise of Corporate Colonialism and White Feminism

In 1997, Edward Goldsmith published a poignant essay on the harms associated with western development. Goldsmith argues that "development is just a new word for what Marxists called imperialism and what we can loosely refer to as colonialism" (Goldsmith 1997, p. 69). While formal colonialism ended, colonizers did not end the practice of colonizing because they were no longer interested in the economic advantages it provided. Instead, colonial powers saw more effective and politically acceptable methods. Accordingly, international development efforts poised as philanthropic campaigns are instead a way to expand the West's market for goods and services through the acquisition of cheap labor and raw materials. A continuity exists "between the colonial era and the era of development, both in the methods used to achieve their common goal and in the social and ecological consequences of applying them" (Goldsmith 1997). Therefore, it is no surprise that during the 1920s when Henry Ford needed rubber for the

tires of his automobiles, he looked at the Amazon rainforest as an opportunity for western development.

The Continuation of Colonialism by Corporate Expansion

In the late 1920s, the Ford Motor Company negotiated an agreement with the Brazilian government resulting in 2.5 million acres of land in the Amazon basin being allocated for the establishment of Fordlândia, an industrial town with the goal of cultivating rubber and exporting it to the United States. The failure of Fordlândia is credited to numerous factors, including a shortage of labor due to the spread of diseases from Americans to local Indigenous workers and others refusing to work due to work conditions. Local workers were provided with American food, such as canned goods, and forced to reside in American-style housing, both of which were unfamiliar and uncomfortable to them. Further, workers were required to wear American identification badges and maintain American work hours during the height of the sun's heat, a departure from their customary work structure. Less than two years after the town's establishment, local workers began to revolt, cutting telegraph wires, chasing managers off properties, and kidnapping the town's cook. Ultimately, the town of Fordlândia was abandoned, but not before launching a predatory path for control, destruction, and exploitation in the Amazon. As a form of corporate colonialism, the legacy of Henry Ford contributed to the rise of neocolonial economics and ecological collapse in the Amazon basin that can be traced back to the community of Fordlândia (Barkemeyer & Figge 2012).

Ford Motor Company was not the only proponent of corporate expansion and western development during the 1920s. Around the same time that Ford was setting up his new town in Brazil, the United Fruit Company was leveraging the ideology of white supremacy to take domination over Indigenous land, resources, and culture and racially divide the labor of banana

harvesting throughout Latin America. Like Fordlândia, United Fruit established American-style towns and housing for local workers, which were managed by American white men who exploited local workers, reinforced the racial hierarchy, and reproduced gender norms (Martin 2018). While the impacts of colonialism on tribal nations of the Amazon differ from those of North America, the crimes of American companies leveraging the ideology of white supremacy to take domination over Indigenous land, resources, and culture are not unique to any one country or continent. This form of imperialism intersects with other forms of oppression to create crimes of the powerful and continue the legacy of colonialism. Corporate colonialism is the continuation of settler colonialism through the legitimized policies and practices of powerful nations taking and maintaining control over less powerful countries by establishing settlements and exploiting natural resources (Comack 2018).

Today, corporate colonialism is fueled by capitalist culture and consumers' demand for their beloved avocados, almond milk, and smartphones, often sourced from developing countries. Capitalist culture is the set of social practices, behaviors, and values in a society that is built around an economic system that rewards increased production and consumption, expansion of industrial activity, private enterprise, and a social hierarchy based on income (Comack 2018). Consumerism is both an effect and cause of capitalism. Without consumerism, capitalism would not exist, but without capitalism, consumerism would not be powerful. Consumer behavior is what drives an economy, particularly a capitalist economy. Within a capitalist society is a social hierarchy based on income and unjust class systems built upon white supremacy, settler colonialism, and the exploitation of land, natural resources, and low-income laborers.

The Role of White Feminism and Consumerism

An important component of modern corporate colonialism is white feminism, a racist ideology that began in the early 1900s with the rise of suffragettes and "Votes for Women." In 2021, theorist Koa Beck released her groundbreaking white feminism theory, which explores the role of not only race and class in feminism, but also the role of consumerism. According to Beck and rooted in capitalism and the attainment of the same privileges known to (white) men, white feminism lauded suffragettes as affluent white women who advocated for gender equality and women's right to vote through direct action and civil disobedience. Suffragettes yearned to be seen as equal to (white) men and believed that the best path to equality for (white) women was one that pacified their husbands and upheld Christian values and traditional family roles. Immigrants and other women who were poor, uneducated, fat, or those who identified as Black, Indigenous, trans, queer, or any identity other than the patriarchal image of a "good white woman" were seen as a threat to the suffragette's agenda (Beck 2021).

As a result, suffragettes created an image of who the ideal suffragette was and excluded anyone who did not meet their standard. A suffragette was aristocratic, fair-skinned, straight, thin, and well-educated. A suffragette strived to be a good wife, mother, and Christian woman. She supported business, dressed well, and enjoyed spending money (Beck 2021). Therefore, the suffragette movement was not only comprised of an elite group of upper-class, white women, it was also a brand. In many ways, the white feminist identity conflates with the ability to wear luxury clothes and shop at exclusive stores (Beck 2021). The ideology preaches the importance of individual success and conceives of equality as something women can achieve primarily through professional endeavors. At its core, white feminism is fundamentally exclusionary.

One of the main goals of white feminism is becoming an empowered elite woman with purchasing power, which often leads to the exploitation of nonwhite women (Beck 2021).

Accordingly, over a century later, one of white feminism's most loyal allies is consumerism. Today, white feminism is often promoted through a white corporate success model that has picked up momentum under the hashtag #girlboss. First introduced by Sophia Amoruso in 2015 in her book *#Girlboss*, the term represents the professional, successful, feminine woman empowered by her high-earning, independent status. These savvy white women executives leverage feminism as a marketing strategy, while also striving to not question or change systems of power, such as white supremacy, patriarchy, or settler colonialism, but, instead, to reach the highest level of success within existing structures, ignoring the harms these structures inflict upon other (nonwhite) women.

Take for example, Sandberg's explanation in *Lean In* of why there are not more (white) women leaders in corporate America. She argues that board rooms are dominated by men not due to systematic inequality or structural barriers, but because of the individual choices and actions of women. In other words, to solve gender inequality, women must change. Sandberg leverages her experience as a high-paid corporate executive to advise her readers that to change the power dynamic in corporate America, we must "lean in" to male-dominated executive spaces and marry a husband who helps with household chores and child rearing (Daniels 2015). *Lean In* reminds us of white women's aspiration to achieve the status and privilege of white men. The idea that working harder and marrying well is how we solve gender oppression not only reeks of white feminism but is also reminiscent of the suffragette agenda. By failing to acknowledge her privilege as an affluent white woman, Sandberg offers a one-size fits all approach to feminism that only benefits her, those with her lived experiences, and those who profit from consumerism and corporate expansion.

Similarly, Eve Ensler's *One Billion Rising* campaign is built upon white feminist branding. Ensler, best known for her play, "The Vagina Monologues," launched her new campaign on February 14, 2013, or what she refers to as "V-Day" for victory, valentine, and vagina. To fight violence against women, Ensler's organization raised hundreds of thousands of dollars through donations, the selling of branded merchandise, and a call for women to publicly gather on "V-Day" to bring awareness to violence against women. However, Ensler failed to acknowledge the "Memorial March for Missing and Murdered Indigenous Women," an annual remembrance walk held each year on February 14. Since 1991, Indigenous women throughout North America have gathered to honor and raise awareness of the disproportional rate of missing or murdered Indigenous women (Daniels 2015). Ensler's appropriation of Indigenous women's political acts is an example of how white feminists erase the experiences of nonwhite women in an effort to advance their own agenda, while also encouraging consumption for their own capitalist gains, a primary driver of ongoing corporate colonialism and Indigenous women's oppression. Therefore, this form of feminism is not about the liberation of all women. It is about capitalism and maintaining the comfort of the elite white woman.

Another lesson can be found in Gates' *Moment of Lift* where access to birth control and increased employment for low-income women is presented as the solution to gender inequality. While access to contraceptives and opportunities for gainful employment are critical for healthy communities, the notion that gender oppression is solved by certain populations limiting reproduction and joining the labor force that sustains the markets of the West is reminiscent of social policy of the 1900s. Gates's approach to gender equality reminds us that birth control continues to be pushed on historically marginalized communities and purchasing power continues to be the measure of equality for white feminists. Disguised as philanthropic endeavors

and community development, white feminists are selling corporate development, or the modern form of European violence-based colonialism that inflicted centuries of pain, suffering, and oppression, to those who are most harmed by corporate colonialism: nonwhite women.

White feminism is white supremacy in disguise that promotes the comfort and safety of affluent white women by only focusing on sexism and masking white women's participation in white supremacy. As a result, white feminism functions to keep nonwhite women from realizing egalitarianist gains unless those gains also benefit white women, such as taking on reproductive labor or domestic housework to allow white women to succeed professionally. White feminism's capitalist ideology measures success by the individual accumulation of wealth, which is sustained through rising consumption rates. Yet, without the intensification of corporate domination of land and resources and the resulting resource extraction, the rising consumption rates that exponential growth requires is not possible. Accordingly, to keep up with rising consumption rates, corporate expansion continues. Western consumer industries are ripe with injustices that not only exploits low-wage workers, but also pillages the earth and depletes its natural resources.

Weaponizing Feminism in the Fight for Impoverished Population Control

Discussion around the connection between consumerism and environmental degradation is not new. As theorist Aja Barber (2021) points out, "the byproducts of our quest to consume are creating an environmental crisis." Decades of calls for better environmental conservation, investments in renewable energy, and increased upcycling have gained popularity in recent years. The environmental movement has achieved many successes, including international agreement to reach global neutrality by 2050. Climate campaigns, green slogans, and environmental policy are well-received around the world and have even become trendy

throughout Western society. Yet, acknowledgment of and accountability for whom is most responsible for the environmental crisis seems to be less popular.

Studies show that longer work hours, higher income, and more wealth generally leads to higher energy consumption and carbon emissions. For example, the United States houses less than five percent of the world's population but is responsible for most global emissions released over the last century and, when organized by income, the top ten percent of the world's population is responsible for more than thirty-five percent of annual global emissions (Briscoe et al 2021). In addition, research demonstrates that households with more work hours, which equates to higher wages, have significantly higher rates of emissions due to higher rates of consumption (Fremstad et al 2019). Further, as consumption levels increase and corporate expansion persists, climate change worsens. Therefore, the branded corporate white feminist appears to be a driving force of climate change. Yet, if successful white women leading the charge for gender equality are implicated in ongoing environmental degradation, what does that mean for feminism? In order to answer this question, we must first understand who is most harmed by climate change.

As previously discussed, a rich body of literature demonstrates that climate change impacts are disproportionately felt by historically marginalized communities. The impact of emissions on a person's wellbeing is influenced not only by income, but also by race and gender, with historically marginalized communities being impacted the most and white women being impacted significantly less than nonwhite women (Briscoe et al 2021). In addition, the impacts of climate change are experienced through the social structures present within a community. When extreme weather is combined with ongoing colonialism, it exacerbates the vulnerabilities already plaguing historically marginalized communities, such as a lack of affordable housing or food

insecurity. Further, research shows that nonwhite women are at the highest risk of dying from climate-related or linked events, illustrating yet another example of how white feminism and its promotion of consumerism through corporate branding contributes to the oppression of nonwhite women (McDermott-Levy et al 2021). Ironically, Sandberg's advice to work harder (or longer) as a solution to gender inequality and Ensler's obsession with feminist branding (or buying more stuff) to draw attention to women's oppression appear to do little more than maintain white women's comfort and drive climate change, which ultimately leads to further oppression of nonwhite women.

While white feminists' contributions to climate change are easily recognized, the harm to nonwhite women through white feminist branding and consumerism does not end with increased greenhouse emissions. In recent years, advocacy for increasing access to contraceptives to combat climate change, particularly in developing countries, has picked up popularity. Beginning in 2007 and continuing as recent as 2014, IPCC reports on human population growth as a primary cause of climate change is a catalyst for the promotion of population control policy as not only an approach for economic progress but also for environmental conservation (Cafaro 2012). Further, the IPCC's conclusion that the majority of population growth is taking place in underdeveloped counties encourages population control policy to focus on low-income, communities of color in underdeveloped countries, or in other words, the global south.

At the core of population control policy is the goal to lower lifestyle carbon emissions, which, in theory, helps to combat climate change. However, as history shows, population control policy targets mostly low-income, nonwhite communities, those least responsible for climate change, based on both consumption and lifestyle emission rates, and those least likely to benefit from the industrial activity driving climate change, based on both income-levels and buying

power. Further, based on consumption levels, nonwhite women are least responsible for climate change while also being least likely to benefit from the economic processes driving climate change, based on income, wealth, and occupation, and least likely to participate in policymaking around climate solutions, based on positions of power (Briscoe et al 2021). As a result, those most responsible for the lifestyle carbon emissions that are driving climate change, mostly affluent, white Western households are not targeted by population control policy. Therefore, low-income, nonwhite communities continue to be scapegoated for global problems created largely by Western society, which allows responsibility to be deflected from the cushy lifestyles of the white elite.

A quick read of her book will find that Gates's gender equality campaigns target low-income, nonwhite communities, claiming to empower women by providing them the ability to control their fertility and opening up opportunities for education and employment, both of which are strong measures of success within the white feminist model. Ironically, Gates's approach to liberation for nonwhite women is to join the Western capitalist institutions responsible for much of the oppression nonwhite women experience, which begs the question: does population control policy really empower nonwhite women? If consumerism and corporate expansion drives climate change and nonwhite women are most harmed by a changing climate, women empowerment campaigns, which are rooted in girlbossing and the attainment of corporate success and purchasing power, really only benefit affluent white women.

Chapter 2, Section III: A Call for Indigenous Feminism

An important foundation of the white feminist model is the belief that all women derive the bulk of their oppression from patriarchy. Yet, patriarchy was a product of European society

and foreign to most precolonial tribal nations. Many precolonial Indigenous women held political, social, and economic power that contradicted the European notion that women were second class citizens, inferior to men, and the property of their husbands. While Indigenous women need liberation from patriarchy due to Christian capitalism brought by colonial agents, patriarchy is not the sole or even primary source of their oppression. However, with the white feminist agenda rooted in the power positions of affluent white settler women, sexual liberation, not decolonization, is the primary goal of white feminism. As such, there is much to be learned about women's liberation from Indigenous feminisms and the matriarchal traditions of tribal nations.

The Role of Decolonization in Feminism

Although the call for decolonizing feminism is often muffled by girlboss noise, it is not an entirely new siren. Critical race feminists and Indigenous scholars and philosophers have been sounding the alarm for years. For example, in 2017, philosopher Margaret McLaren published the anthology *Decolonizing Feminism: Transnational Feminism and Globalization* to sum up this important body of work. The book rightfully acknowledges the groundbreaking work of many pioneers in this space, including Anibal Quijano and Chandra Talpade Mohanty, among others. Most notably is Quijano (2000) who, almost 25 years ago, identified the structural relationship between race and labor, mediated by capitalism and globalism, that gives rise to the exploitation of workers. Building upon this idea, Mohanty (2003) argues that a healthy economy, racial equality, and fair distribution of wealth are the crucial elements in decolonizing feminism (2003). Both of these works, along with others, provide the primer for why and how the white feminist model fuels consumerism and corporate expansion, and ultimately climate change and the resulting oppression of marginalized communities.

A few years later, McLaren joined forces with Celia T. Bardwell-Jones to edit a special issue of *Hypatia*, a similar anthropology that compiled various feminist theories addressing race, class, colonialism, and Indigenous lifeways "to cultivate and encourage theorizing about Indigenous philosophies and decolonizing methodologies" (2020). And while the series has several notable contributions that highlight the many reasons Indigenous scholars reject mainstream feminism as a mode for advancing prosperity for First Nations, the most valuable contribution within this work may be the editors' acknowledgement in the introduction that feminist philosophy is mostly written by and for white women. The editors call out their privilege as white settler women and remind readers of the potential harm, although almost always well-intentioned, of settlers attempting to address the harm of a system they benefit from and uphold, and instead perpetuating further instances of the white feminist ideology (Bardwell-Jones & McLaren 2020).

Accordingly, while my research aims to examine the role and participation of white women (including my own) in the white settler state and how we often benefit from the resulting ongoing oppression of nonwhite women, I recognize and acknowledge my limitations in identifying, addressing, and remediating the harms of the white settler state; for I, after spending over a decade in Corporate America looking to successful, empowered white women for the roadmap to my liberation, only became aware of the marriage between feminism and white supremacy, colonialism, and capitalism after reading the works of critical race feminists and Indigenous scholars. Indeed, there is much for settlers to learn from these scholars.

Central to Indigenous lifeways are the ideas of decolonization, sovereignty, and reciprocal relationship to land. Decolonization is essential to Indigenous feminism as much of the historical oppression Native women experience is the result of settler colonialism, which

stripped tribal nations of their sovereignty, land, and cultural identity. Indigenous feminism grounds the concepts of autonomy and agency in the reciprocal relationship tribal nations have with the land, which they derive their belonging, community, responsibility, and purpose from. Thus, one of the most important differences between white feminism and Indigenous feminism is how prosperity is defined. While white feminism measures success through the attainment of property, a symbol of status and power, Indigenous feminism condemns dominion and exploitation of land. The very concept of land as a resource is a product of colonialism (Goldsmith 1997). The idea of land as property did not exist in the Americas during precolonial times. Rather, "in the process of settler colonialism, land is remade into property and human relationships to land are restricted to the relationship of the owner to his property" (Tuck & Yang 2021, p. 5). Accordingly, Indigenous Nations do not view land as a resource for development or property, nor the attainment of material things as a measurement of their success.

Many tribal nations define prosperity through the sustainment of healthy communities and land that is well cared for. Severt Young Bear, a member of the Lakota tribe, explains how the Lakota Give-Away Ceremony is rooted in his tribal identity and relationship to the land. In Lakota tradition, when a member of the tribe reaches a certain level of success, they are honored in a ceremony where they give back to their community. The ceremony is based on a few core beliefs: possessions are not what life is about, what you give away comes back to you, and the success of a person's life is based on what you are able to give back to your family and community. The purpose of the Give-Away Ceremony is to share blessings with one's community and to release people's spirit from the attachment to material possessions (Bear 1996). Many Indigenous tribes have the tradition of the Give-Away in some form. The ceremony demonstrates how tribal nations define success not on degrees or corporate titles but on what

they are able to give back to their community, which represents many First Nations' belief that taking care of each other and the land is the greatest demonstration of a prosperous life.

Tribal ceremonies and rituals, often at the core of tribal nations' identities, are contingent not only on their community, but also on the land where they are enacted. Rituals function as a reproduction of the culture, beliefs, and identity of Indigenous Peoples and the ability to pass rituals and ceremonies on to their children. As such, "Indian Peoples' struggle against environmental racism and degradation of their lands is one way in which they assert tribal sovereignty and power over their fertility" (Lumsden 2016, p. 36). Therefore, an assault on tribal land is an assault on the reproductive ability of Indigenous Peoples. Sovereignty cannot exist without tribal nations maintaining their identities, which is tied to their relationship with the land. Tribal sovereignty cannot occur without tribal nations first reclaiming their right to self-govern and their right to the land, making decolonization essential to the liberation of not only Indigenous women, but all Indigenous Peoples. As Dakota scholar Kim Tallbear (2012), a citizen of the Sisseton Wahpeton Oyate, writes, "the Dakota War of 1862 may be [the Dakota's] most important origin story," crediting the war with a "bloody re-mapping of Dakota life" and changing forever the identity of the Dakota Peoples.

Indigenous scholars teach us that unique to tribal nations are "those who have creation stories, not colonization stories, about how they came to be in a particular place" (Tuck & Yang 2021, p. 6). Anthropologist Audra Simpson, a citizen of the Kahnawà:ke Mohawk Nation, argues that a settler's possession of land is not possible without sustaining the dispossession of another. Simpson explains that because the identities and cultures of Indigenous Peoples are inextricably linked to the lands upon which they live and the natural resources upon which they depend, the continued possession of settler territory requires ongoing erasure of the tribal nations that belong

to the land (Simpson 2011). In the model of settler colonialism, the settler does not forfeit the land they or their ancestors took control of, resulting in white settler states depriving tribal nations from reclaiming their creation stories and realizing their true identity. Yet, decolonization requires not only the return of land to tribal nations, but also the recognition of the sacred relationship between Indigenous Peoples and their land, viewed not as property but as an explanation of who they are. Therefore, with tribal nations still separated from their land through federal policy and corporate expansion, settler colonialism is ongoing and Indigenous Peoples continue to be erased by the modern institutions formed out of the settler state (Simpson 2016).

A Reciprocal Relationship to Land

Scholar Glen Coulthard, a member of the Yellowknives Dene First Nation, and his theory of grounded normativity calls for a return to land-based Indigenous practices based upon the idea that the identity of humanity is inherently connected to nature. The Dene Peoples of the Northwest Territories in Canada are aware of both the inherent value of the co-existence of humans and nature and how important land is as a teacher. Grounded normativity recognizes a reciprocal relationship between humans and nature and views the land as a model for balanced, harmonious living without domination or exploitation. The Dene Peoples value their land not only for the resources that their material survival depends upon, but also for its significance to their identity and to their relationships with both other people and nature. Further, many tribal nations, including the Dene, believe that nonhumans embody agency in the same way that humans do, which requires humans to provide land, animals, rivers, and trees with the same respect we provide to other people. Grounded normativity believes that if we honor our obligation to nature, then nature will reciprocate and honor its obligations to us, which will provide for our sustained survival (Coulthard 2014).

Because reciprocity to the land is central to cultural reproduction for First Nations, the destruction of or the removal of a tribe from their ancestral lands is an attack on the tribe's identity. As Indigenous culture erodes, and Indigenous lifeways are replaced by the white settler state with the children of First Nations removed from their homelands to be taught by white settlers, centuries of history, culture, and customs, those that can only be passed down through land-based practices and rituals, are lost. Which is why when more than 60 members of the Osage Nation were murdered by white settlers who sought to inherit their land rights and, in turn, their wealth, often by marrying Osage women and then slowly poisoning them, the Osage mourned not only for the loss of their loved ones but also because their children would now be taught by white people. The Osage murders, which took place in Oklahoma during the first quarter of the twentieth century, are tragic not only due to the great loss of Osage life, but also due to the inability of those killed to tell their children the stories of their elders and to pass down to their children the sacred ways of their people and their ancestral land, both central to the identity of the Osage and passed down generation to generation (Grann 2017).

Accordingly, Indigenous feminism requires not only the protection of bodily autonomy and freedom from violence for Indigenous women, but also the protection of indigenous land. Yet, the white settler state is in direct contradiction with this ideology. As Kim Tallbear (2016) reminds us, "The white supremacist clearing of the land for white settlement, replacement, and control of the land is an ongoing project." Take for example, in 2015, the Standing Rock Sioux Tribe, a sovereign nation of the Lakota, the people of Oceti Sakowin, contested the construction of the Dakota Access Pipeline (DAPL), a new pipeline that threatened not only the tribe's water source, but went directly through sacred Lakota lands within unceded territory of the original Great Sioux Reservation. The West's quest for prosperity (oil) not only pillaged land held sacred

to the Standing Rock Sioux Tribe, but it also threatened tribal identity (land). DAPL eventually was constructed and became operable, but not before a prolonged resistance of the Great Sioux Nation that drew violent-based control and removal tactics by the state in the name of legitimized economic progress, reminiscent of the violence-based practices of early settler colonizers (Gilio-Whitaker 2019).

If Indigenous women's humanity are tied to land, the parallels between forced sterilization and assault on Native women's bodies and the raping of the earth by colonizers cannot be ignored. This relationship is further examined by Sarah Deer (2015), a member of the Mvskoke Nation, who explores the precolonial context of sexual assault. Prior to the arrival of settlers, tribal nations, those that condemned the objectification of women with adequate tribal laws, rituals, and customs that protected women from such violence, did not have a word for rape. In fact, one of the first Mvskoke laws addressing what is known as rape today was written down at the insistence of settlers to demonstrate the lawfulness of the Mvskoke tribe and consisted of forty-three words, six of which vested authority to decide the punishment for the perpetuator with the victim (Deer 2015). The precolonial constructs of sexuality and bodily autonomy awarded women full rights to her body and the use of it. This changed, however, when settler colonization brought with it Christian capitalism and many traditional tribal gender norms were lost to reeducation and assimilation (Deer 2015). It can be argued that colonizers brought with them what is known today as "rape culture," rooted in patriarchy, control of women, and disrespect for nature, and that violence against women is not a result of untamed passion or hormones but, instead, is a learned behavior.

Indigenous scholars remind us that feminism is inherently central to Indigenous lifeways. The protection of bodily autonomy, equal rights, and feminine liberation is deeply embedded

into Indigenous cultures. In precolonial times, Native women had full control over their bodies, including their fertility. Dating back centuries, tribal nations had a number of effective contraceptive methods which were widely accessible to both women and men. Plants and herbs, including the Indian paintbrush plant used by the Navajo and stoneseed used by both the Navajo and the Shoshone tribe, were often made into a tea and enjoyed by women and men to decrease a woman's menstrual cycle, lower a man's sperm count, or prevent the fertilization of an egg. Further, if a woman became pregnant and elected not to give birth, other plants which would terminate the pregnancy were readily available to her (Laszlo & Henshaw 1954). Ironically, tribal nations, those targeted by colonial agents for coercive fertility management, were using birth control long before Western medicine had a name for it. Therefore, the idea that nonwhite women need white women to provide them with access to birth control in order to be empowered falls short.

Reclaiming Feminism

Contrary to the mainstream definition of feminism, which is driving today's white feminist branding of philanthropic outreach campaigns to low-income and nonwhite communities, Indigenous women do not need a white form of feminism to liberate them through the regulation of their fertility. Instead, their liberation resides within their own version of feminism, a decolonial feminism. As Choctaw scholar Devon Mihesuah (2000) reminds us, it is not possible for one feminist voice to speak for all women or even for all women within a race or class category, nor is it appropriate for white feminism to try. Yet, white feminists struggle to understand how their one-size-fits-all approach to feminism harms nonwhite women because it assumes that Indigenous women have the same experiences and needs as all women. By doing so, white feminism erases the unique experiences of nonwhite women; particularly Indigenous

women and those who derive much of their oppression from colonialism, not patriarchy. Instead, we must look to Indigenous feminist scholars and theorist Dian Million, a Tanana Athabascan, who understands how the personal narratives of Indigenous women shine a light on the trauma of violence-based colonialism in a way no one else can. Because Indigenous women feel their histories as well as think them, their testimonials are more than just words; they are political acts (Million 2009).

White feminism does not speak for all women. The mere act of Indigenous women sharing their stories is a form of decolonialism that does more for Indigenous women's liberation than white feminism and birth control campaigns ever could. While reproductive health is an issue that all women are impacted by and concerned with, the sexual violence and reproductive injustice Indigenous women experience not only make their concerns distinct from those of non-Native women, but it also demands a solution that disrupts the white feminist corporate model. Therefore, liberation for all women cannot exist if the liberation (corporate expansion) of the elite white woman depends upon the destruction of the Indigenous woman's identity (land). Decolonization requires a complete transformation of white feminism that unsettles all to truly liberate all; one that recognizes the sovereignty of tribal nations, returns the land to its rightful owners, and acknowledges the unique experiences of Indigenous women, and other nonwhite women.

Chapter 2 Conclusion

Western prosperity has always been tied to the oppression of others. From European colonialism to eugenics and population control policy to corporate women empowerment campaigns, many examples of this relationship exist throughout American history. By white

feminists defining equality and success based on the historical approach to prosperity, they contribute to and sustain the ongoing oppression of nonwhite women through their proximity to the power systems that they depend upon for their own liberation. As a result, through corporate expansion and consumerism, white feminists create and maintain corporate colonialism, and ultimately the colonization of Indigenous women. Therefore, white feminism does not fight for the rights of all women but, instead, exists to protect the comfort of affluent white women. True feminism, or one that seeks to liberate all women, requires a decolonial feminism. However, the decolonization of white feminism cannot occur in isolation or without participation of all for "settler colonialism and its decolonization implicates and unsettles everyone" (Tuck & Yang 2021, p. 7).

A reconstruction of feminism is urgently needed, one that reimagines what prosperity means and takes a stand against white feminism's marriage to white supremacy, capitalism, and colonialism. We need a feminism that condemns white feminists' focus on sexual liberation as the main solution to women's empowerment. One that calls out the harms of the white savior complex, the white aid industrial complex, and the corporate girlboss in favor of a new form of prosperity and freedom. We need a feminism that goes beyond the liberation of white women from sexual and reproductive oppression and recognizes colonialism as the root cause of much suffering. One that demands that the movement be more than gender equality. We need a feminism to restore not only the economic and social dimensions of what women's liberation means, but also the unapologetic, radical political dimension that decenters the individual success model of the white elite. The closest ideology to this goal may be that of indigenous feminism or, as the Dene Peoples strive, one that "protects the intricately interconnected social totality of a distinct mode of life; a life on/with the land that stressed individual autonomy,

collective responsibility, nonhierarchical authority, communal land tenure, and mutual aid, and which sustained us economically, spiritually, socially and politically" (Coulthard 2014, p.65).

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Chapter 3: *Measuring Prosperity in the Era of Climate Change: How a Warming Planet Impedes Healthy Families, Communities, and Economies*

Chapter 3 Introduction

In September 2023, the USDT released a report highlighting how climate change is responsible for significant financial strain to American households by linking several financial impacts to climate-related risks and events, such as reduced income, increased destruction to property, increased transportation costs due to infrastructure collapse, added healthcare costs from climate-related medical needs, and higher expenditures on utilities from increased energy consumption. In addition, the report explains how climate change increases a household's need for savings and insurance products due to unpredictable climate events, along with the increased risk of gaps in insurance coverage as insurers increase households' premiums, reduce coverage, or choose not to renew coverage for households due to climate risk (USDT 2023). With increased knowledge of the relationship between global warming and costs of living, the implications of a changing climate to society continue to become clearer. Yet, few policymakers, community leaders, heads of households, or boards of directors make the connection between the climate crisis and social safety net programs, supplemental food vouchers, employee health benefits, or a volatile housing market.

This chapter explores how climate change directly impacts the prosperity of families, communities, and economies by impeding livelihoods through increased costs of living, exacerbating parenting costs, influencing family planning decisions, and preventing households, communities, and economies from healthy, sustainable growth and resiliency. By examining how a modern society measures prosperity through a review of classical economic theory, historical

policy approaches to promoting healthy families and communities, and modern corporate approaches to measuring both financial performance; the chapter leverages the theoretical framework developed through chapters one, two, and three, and the results of a new study that measures the relationship between outputs of climate change and components of reproductive justice, to call for a new prosperity model based on both financial and nonfinancial performance measures with equal considerations to society, the planet, and the economy.

Chapter 3, Section I: Defining Prosperity

The historical view of prosperity, or economic and societal progress, is best discussed through the views of the three Fathers of Economics, or Adam Smith, who advocated for free markets; Karl Marx, who advanced a radical socialist model; and John Maynard Keynes, who believed in big government and the welfare state. However different in their approach, all three criticized mercantilism, the nationalist economic theory of their time which promoted one-sided trade to maximize resource accumulation within a country, as a limit to human prosperity (Chijioke et al 2021).

Adam Smith, considered by many to be the Father of Microeconomics and the founder of capitalism, believed that prosperity is comprised of three components: human labor, contractual exchange, and preserved self-interests, with an emphasis on the division of labor. In his classic work, *An inquiry into the nature and causes of the wealth of nations* (1776), Smith argues that "labor…is alone the ultimate and real standard by which the value of all commodities can at all times and places be estimated and compared" and establishes the groundwork for free markets in economics. Smith promoted an economics of scarcity, advocated against taxes, and believed

rational self-interest and competition leads to economic prosperity or, in other words, that by doing what is best for oneself, an individual does what is best for society (Smith 1776).

In contrast, Karl Marx, an economist and philosopher sympathetic towards the proletariat, published his *Communist Manifesto* in 1848, which was followed by a three-volume *Das Kapital,* published over a period of several years from 1867 to 1894. In both, Marx criticizes both capitalism as a mode of materialism and the idea that harmonious societies develop through class conflict as a system of oppression, exploitation, and, eventually, failure. Marx explains how capitalism creates tensions between classes, eventually leading to class consciousness and self-destruction. He believed capitalism would eventually be replaced by a society of individuals who, absent state, social class, hierarchy, or private ownership, would freely produce and reproduce the conditions of a society based on their individual needs and desires (Marx 1907).

Somewhere in between the self-interests of economic internationalism and class-free Marxism, resides Keynesian economics, known as a collection of ideas promoting governments with a responsibility to interfere with markets in times of crisis. During the Great Depression of the 1930s, John Maynard Keynes, known by many as the Father of Macroeconomics, published *The Means to Prosperity,* a series of essays challenging neoclassical economics by advocating for counter-cyclical public spending to address unemployment. Shortly after in 1936, Keynes published *The General Theory of Employment, Interest and Money* where he outlined how fiscal policies can be used to mitigate the adverse effects of economic recessions and depressions. Keynes believed that a sustainable, harmonious system of capitalism that promotes peace and prosperity was possible, but only if the system was managed with the freedom of trade, and without pitting societies against each other (Keynes 1936).

While wildly different in approach and theory, economists Smith, Marx, and Keynes were pioneers in the exploration, understanding, and promotion of prosperity as a measure of progress based on the establishment of societies and the development of economic institutions, activities, and participants. Today, modern economics and fiscal policy are rooted in ideals and principles established centuries ago, at a time when societies were shifting from the human economy and agrarian institutions of mercantilism to mechanical processes, factory systems, and industrial manufacturing, when economists had the luxury of measuring production and consumption without the consideration of climate change. However, following the end of World War II and the Industrial Revolution, countries, cities, and households across the globe strengthened their economies by increasing their reliance on fossil fuels, which begs the question: is the modern understanding of prosperity still relevant?

The Measure of Prosperity

At the turn of the 20th century, following the publication of Smith's and Marx's iconic works but preceding the advent of Keynesian policies, economist Simon Patten published *The Theory of Prosperity* (1902), highlighting his belief that a system of capitalism will always provide enough resources for everyone and that, while individuals may despair from unfulfilled pursuits for prosperity, anguish is due to the misuse of goods, not the lack of them. Patten builds upon his theory in *The New Basis for Civilization* (1968) where he advocates for a new civilization, one founded upon economic institutions that are efficient and productive, in place of a civilization developed from moral or ethical principles. Patten promoted an economics of abundance and believed that poverty was not sustained over the long-term in a capitalist system as long as resources were utilized through efficient production and consumption.

Alternatively, social theorist Max Weber warns of a new civilization leading to the disempowerment of the modern self in *The Protestant Ethic and the Spirit of Capitalism* (1904). Weber introduces the idea of rationalization in the context of capitalism, believing that with the rise of modern capitalism, societies replace tradition and values as the main drivers of social behavior with concepts of reason and logic. And, while rationalization can bring enhanced individual freedom through increased knowledge from the ability to calculate and predict, Weber points out that agency is often crippled by capitalist systems through growing impersonality and enhanced control of humans which leads to "sensualists without heart" and "specialists without spirit," the two sides of disempowerment. Most notably, is Weber's prediction that the end stages of capitalism will bring about one of two scenarios: either re-enchantment with the birth of new deities or the rebirth of old ideals, or "mechanized petrification embellished with a sort of convulsive self-importance" (Weber 1904, p. 183).

Today, with rising concerns of the conflict between growing greenhouse gas emissions and human wellbeing, many believe American society resides within late-stage capitalism, where individual freedoms, once enhanced through mechanical and digital processes with expanded employment opportunities, lower consumer prices, and increased access to information, has deteriorated due to widening gaps between social classes and expansive corporate monopolies. For example, in 2016, ecological economist Tim Jackson outlined the conflicting relationship between human wellbeing and economic growth in *Prosperity Without Growth: Foundations for the Economy of Tomorrow*, first published in 2009 in a report to the United Kingdom Sustainable Development Commission. The book outlines evidence showing that, beyond a certain point, economic growth does not increase human well-being, while exploring the complex relationships between economic growth, environmental crises, and social recession. Jackson's proposed route

towards a sustainable economy includes a restructuring of the definition of "prosperity" within the boundaries of current research that maps global warming to adverse impacts on humanity (Jackson 2016).

Research demonstrating the link between climate change and human wellbeing is growing rapidly. For example, in 2018 alone, five studies were published illustrating the correlation between extreme weather events and the wellbeing of families, communities, and economies. One study concluded that as climate change increases, along with the associated increased incidents of climate disasters and damage to ecosystems, adverse impacts to economic systems, along with increased rates of food insecurity, infectious disease, and poverty, will also increase (Mal et al 2018). Another study found extreme weather events not only adversely impact socioeconomic and environmental attributes, but also demographic factors, such as family planning and birth rates (Nandi et al 2018). A third study found a correlation between climate disasters and income disparity between classes, with incomes for non-agriculture households above the poverty line being impacted the most by climate events (Keerthiratne & Tol 2018). Two additional studies, which explored the relationship between climate change and progress towards the United Nations Sustainable Development Goals (SDGs), found global warming is a driver of increased occurrence of climate disasters and, in turn, decreased progress towards the SDGs, concluding the following: economic development is dependent on climate change mitigation, methods of economic planning should consider the economic and human costs of extreme weather events, and climate change mitigation requires investment in the development of sustainable infrastructure (Wu et al 2018, Xie et al 2018).

Building upon these studies, in 2019, a group of researchers selected seven Asian countries, namely China, Japan, India, Pakistan, Vietnam, Bangladesh, and Philippines, to

analyze the impact of climate disasters on indictors of human wellbeing and overall societal prosperity. The study reviewed data from the World Bank and the International Disaster Database, a database compiling information on occurrence and impact of mass disasters, over a 13-year period between 2005 to 2017, and concluded that extreme weather events, defined as storms and associated floods, increase migration, consumer prices, and rates of poverty, which, in turn, decrease access to economic resources, measured by increased costs of healthcare and energy demand and decreased rates of financial development (Abbas Khan et al 2019). Yet, as more evidence emerges demonstrating that historical approaches to prosperity, those that center unchecked economic growth, fall short, many economists disagree on an effective, pragmatic path towards sustainable economic growth, or one that positively correlates with human and societal wellbeing.

In 2020, two theorists introduced a framework to address the dissatisfaction of individuals and communities left behind by globalization, technological advancement, and economic progress through the "decoupling" of economic prosperity and social prosperity. The framework consists of four indices: one representing social wellbeing, measured in terms of solidarity which covers the human need for social belonging; one representing individual wellbeing, measured in terms of agency which covers the human need to control their own fate; one representing economic growth, measured in terms of material gain by Gross Domestic Product (GDP) per capita; and one representing ecosystem health, measured in terms of environmental sustainability by the Environmental Performance Index. Included with the framework is a theoretical analysis with findings that identify a correlation between both solidarity and GDP and agency and GDP and show the correlation between both sets of indicators in decline (Lima de Miranda & Snower 2020).

A year later, in 2021, an inclusive prosperity framework comprised of a taxonomy of public policies to address economic instability and inequity was introduced. The framework divides policies into two dimensions based on the social class of the policy intervention's target beneficiary and the stage of policy production where the intervention takes place, organized by pre-production, production stage, and postproduction policies. Importantly, the authors point out that traditional welfare states mostly rely on social policy in two stages to correct inequality and insecurity: pre-production policy, or interventions that shape market outcomes through endowments, such as education and vocational training, brought to market by individuals; and postproduction policy, or interventions that shape the distribution of capital through the transfer of wealth, such as progressive taxation and social insurance, after economic decisions have been made. Separately, production stage policy, or interventions that shape economic decisions of firms through increased competition and employment, are relied upon solely for increased productivity, innovation, and growth. The framework advocates for social and economic policy to merge; for social policy to more closely resemble industrial policy and economic policy to mirror labor market policy; and for policymakers to leverage not only pre-production and postproduction policies to address inequality, but also production stage policy (Rodrik & Stantcheva 2021).

Those reluctant to integrate social equity objectives into production stage policy often fall into the self-described "socially progressive but fiscally conservative" camp; those who acknowledge the existence of, and the harm caused by, systemic oppression of certain demographic groups, but balk at any perceived discomfort or inconvenience to them caused by proposed policy interventions aimed at calibrating the same oppressive institutions that give them a leg up. In fact, having an advantage seems to be expected, even normalized, as an

indication of prosperity. Accordingly, a recent review of modern economic theory explored whether, with the rise and promotion of capitalism globally, mercantilism has truly perished. Leveraging game theory, which, in 1953, was significantly expanded by mathematician John Nash's decision-making theorem to show a player's strategy is only optimal when considering both their optimal outcome and those of other players, researchers analyzed centuries of economic achievements through discovery, innovation, and technology to conclude that, absent the consideration of others, the associated economic strategies of colonialism, industrial revolution, and globalization are actually evolvements of mercantilism (Chijioke et al 2021). Consequently, in light of these conclusions, is it possible then to achieve societal prosperity within the constructs of modern economic theory?

For true prosperity to be realized, it must be understood as a component of freedom, and, therefore, dependent upon the protection, promotion, and realization of individual autonomy. In 1785, Immanuel Kant published the *Groundwork of the Metaphysics of Morals* where he argues that the ability for individuals to make rational decisions about their lives is the fundamental characteristic of human beings, highlighting the importance of respecting individual autonomy and treating each person as an end within themself, rather than a means to an end, as often promoted by mercantilism. This idea of autonomy was further explored by John Stuart Mill, who published *On Liberty* in 1859 to shine light on the importance of allowing individuals to make their own decisions about their own bodies and their own lives without interference from the state. Indeed, the path towards sustainable development is paved with autonomy, which is the foundation of individual satisfaction, communal wellbeing, and societal prosperity. Yet, how individual freedom and autonomy interacts or correlates with familial prosperity is more complicated.

Healthy Families

To fully understand the health of a family, it is important to understand how society interprets familial prosperity. With a shift from agrarian societies to industrial ones, and the social transformation that accompanied it, the economic benefits of children mostly dissolved, while the cost of children, such as education expenses, increased steadily over time (Schoen et al 1997). In 1960, Gary Becker, one of the first theorists to explore family economics, used an economic model to analyze fertility desires, concluding that children were like consumer goods, as income increases, so does the number of children within a family unit. When it was found that higher income groups frequently have fewer children, Becker further explained that the demand for children depends not only on parental income but also on the cost of rearing children, with higher income households desiring higher quality children, which tend to be more expensive (Becker 1960).

A couple of decades later, in 1981, Becker published *The Treatise of the Family*, in which he analyzes the institution of the family through the lens of household economics, explaining that the choice to have children is made by individuals maximizing their utility, or by comparing benefits and costs. Becker acknowledged that income and other limited resources restrict human activity but believed that the greatest barrier to humanity realizing its full potential was the constraint of time, highlighting his belief that the flow of goods and resources can satisfy everyone's needs, but not everyone will have their needs met due to limited time (Becker 1992). Becker's limited conclusions on fertility desires, although important, are an example of how the role of bodily autonomy in determining the fulfillment of fertility desires is often ignored, forgotten, or misunderstood.

Full Bodily Autonomy. For centuries, theorists have sought to understand the role of and impacts to autonomy. Kant, one of the first to highlight its importance, believed autonomy, which he defines as the moral right of an individual to make their own decisions about their own life, is one of two components needed for a meaningful life. The other is rationality. More than 100 years before Weber used rationalization to describe markets, Kant explains rationality as an individual's motivation to govern their own life (Kant 1785). Building upon Kant's ideals, in 1881, Friedrich Nietzsche, one of the most influential modern philosophers, introduced the concept of ethical autonomy as a form of self-responsibility to mediate the demands of self-respect, as required by Kant, with the needs of self-love, as explained by Aristotle. Nietzsche believed that with freedom came responsibility for one's own life, shown by his linking of autonomy with freedom and self-responsibility (Nietzsche 1881).

While these early pioneers in philosophy shaped the modern understanding of autonomy, it was not until the 1970s that two mainstream views on autonomy surfaced within the concepts of free agency and self-determination. In 1970, Gerald Dworkin explored the correlation between an individual acting freely and doing what the individual wants. A year later, Harry Frankfurt explained his view on acting freely, which he uplifts as the human notion of freedom. Both of these important works laid a foundation for relational autonomy theorists, who would spend decades critiquing Dworkin and Frankfurt for neglecting to consider the role of societal structures in realizing individual autonomy. Relational or relative autonomy, which shines light on the social dimensions of individual autonomy and how its realization can be restricted by societal structures as discussed in chapter one, was introduced in 1989 by Jennifer Nedelsky, bringing with it a multidimensional analysis of autonomy that is better suited for application in reality (Mackenzie 2021).

More recently, in 2011, a group of theorists introduced the theory of conjunctural action, a new framework that explores the importance of structure and agency in determining human action, based on the belief that “human societies, the product of human agency, are structured through processes that emerge from the social capabilities and propensities of human organisms” (Johnson-Hanks et al 2011, p. 1). The theory explores how family behavior changes based on the interplay of societal structures and events that reconfigure those structures, concluding that fertility behavior is best understood as a function of both individual traits and social constraints of structures that the behavior occurs within and, therefore, social action cannot be interpreted as a causal effect of structure versus individual agency, cultural influences, or human biology. Rather, human behavior is a product of all four (Johnson-Hanks et al 2011).

Historically, feminist literature has focused on bodily autonomy and how patriarchal societies seek to control and regulate women's bodies and reproductive capabilities. In *The Second Sex* (1953), Simone de Beauvoir introduces the concept of "the other", by arguing that women are not born but made, and that society constructs femininity as “the other” of masculinity. De Beauvoir introduces the idea of reproductive oppression, or the ways in which patriarchal societies seek to control women's reproductive capabilities through policies, laws, and social norms, and choice feminism, which emphasizes the importance of individual choice and agency in reproductive decision-making. Researcher Elizabeth Wick agrees, writing, “The principle of autonomy is an important foundational concept for the law of human rights, alongside principles of equality and dignity” (2016, p. 6). Bodily autonomy is indeed an essential ingredient in reproductive freedom. However, some feminist scholars criticize the idea of choice feminism for its sole focus on individual agency and failing to acknowledge the social and economic structures that shape family planning decisions.

While, where there is reproductive justice, there must also be the protection of full bodily autonomy, importantly, the attainment of autonomy does not always equate to the realization of reproductive justice. Full bodily autonomy within the reproductive justice framework requires not only access to comprehensive healthcare, but also the ability to secure housing, food, education, and employment, which makes individual choice alone not enough to address the structural inequalities that shape family planning. Today, most feminist theorists recognize the importance of measuring bodily autonomy with a lens of intersectionality. As previously discussed, the concept of intersectionality was introduced in 1989 by Kimberlé Crenshaw. In her iconic work, *Demarginalizing the Intersection of Race and Sex,* Crenshaw argues that the experiences of Black women cannot be understood solely through the lens of race or gender, and advocates for an intersection of race and gender to explain the ways in which marginalized communities face additional barriers to comprehensive health care. In 2000, bell hooks further explores intersectionality in *Feminism is for Everybody* by advocating for feminism to be inclusive of all marginalized groups and highlighting how the struggles for racial, gender, and economic justice are interconnected, along with their remedies being interdependent.

Fertility Desires. There are a variety of personal, social, and economic reasons why people choose not to have children including personal choice, competing priorities with education or career goals, financial considerations, relationship issues, health factors, and environmental concerns. While some may simply prefer not to have children and see it as a personal decision, others may choose to focus on their career or education goals in lieu of starting a family. Still, others may choose not to have children due to relationship issues, such as being single, or being in a relationship where the other partner does not want children. In addition, health concerns such as a genetic disorders or chronic illnesses may lead to a decision

to forgo having children, as may financial hardships. Research around fertility desires seeks to understand and address the ways in which individuals, couples, and cultures make decisions about their reproductive health and well-being.

In January 2023, the *National Center for Health Statistics* released data showing birth rates across the United States during the years 1980 through 2007 fluctuated between 65 to 70 births per 1,000 women aged 15 to 44, with birth rates dropping by 20 percent in 2008 to an average of 55.8 per 1,000 women in 2020 (Martinez & Daniels 2023). Over the last decade, several studies have investigated the reasoning behind the declining birth rate in the United States, with most linking family planning decisions to the Great Recession and associated medical, housing, and financial concerns. The years of the Great Recession were also the years when millennials began graduating from college, getting married, and preparing for parenthood. Today, millennials are not only the largest generation in the workforce, but also the largest generation of childbearing age.

Studies on fertility desires can be traced back to the 1960s and the work of John Rock, an American obstetrician and gynecologist, who, after observing the physical and emotional toll of unplanned pregnancies on women, developed the first oral contraceptive pill, revolutionizing modern reproductive healthcare (Marsh & Ronner 2008). Rock's work influenced Ansley Coale, whose 1967 landmark study *The Voluntary Control of Human Fertility* analyzed various methods of contraception available within various historical, social, and cultural contexts and the ability for individuals to control their reproductive choices for each. Coale's work helped to explain drivers of family planning decisions and was influential in highlighting the importance of individual agency and reproductive choice through the context of demographics and population dynamics (Coale 1967).

In 1980, philosopher Amartya Sen introduced the concept of capability in *Equality of What* where he argues that governments should be measured against the concrete capabilities of their citizens. Sen believed that only when all societal and economic barriers are removed can individuals truly be said to act out of personal choice and, therefore, it is the responsibility of a society to decide what capabilities individuals are guaranteed (Sen 1980). That same year, Ronald Rindfuss published a study evidencing that higher education levels of women correlate with lower fertility rates (Rindfuss 1980). What remains unclear, however, is whether a decreased capability for education leads to an increase in the capability to have children, or if an increased capability to have children decreases the capability to receive an education. Further, if higher education inversely correlates with fertility rates, does that mean an increased capability to obtain an advanced degree results in better capabilities to determine reproductive destiny, or does an increased capability to control fertility result in increased capabilities to seek out education, knowledge, skills, and opportunities?

While many highly educated men have spent their careers debating the capabilities and choices of women, few have stopped to consider what might come from asking women what they would choose, if provided access to all their capabilities. In 2011, Martha Nussbaum expanded on Sen's capabilities approach by emphasizing that all individuals deserve human dignity and the capability to make choices about their own bodies. Nussbaum's work seeks to understand what an individual is able to do and become when provided access to all capabilities, including both the freedom to decide the conditions of one's life and societal opportunities for growth. Nussbaum outlines the conditions necessary for human dignity through life, autonomy, bodily health, emotional health, mental freedom, practical reason, societal belonging, leisure, nature, and environment (Nussbaum 2011).

Plenty of historical and recent research seeks to explain the gap between fertility desires and birth rates. A 2010 study comparing the number of children an individual claimed to want at ages 16 to 24 with the achievement of their fertility goal by age 40 found that underachievement of fertility goals is likely a consequence of delayed marriage or competing priorities, such as advanced education or career achievements, concluding that discrepancies in the fulfillment of fertility desires are rooted in chances to achieve motherhood (Morgan & Rackin 2010). In addition, a 2015 study examined how the value assigned to parenthood impacts the achievement of fertility desires and found that the higher value placed on parenthood, the lower the correlation between fertility intention and social and cultural influence, such gender norms, religion, family pressure, and career achievement (McQuillan et al 2015). While social and cultural influences have been linked to fertility desires in many studies, only a few studies consider economic influences, such as income or costs of living, on both fertility desires and the fulfilment of those desires.

The impact of economic recession on family planning decisions is significant. When examining the impact of Great Depression of the 1930s, the oil shocks of the 1970s, and the economic shocks in Central and Eastern Europe during the 1990s, along with their associated effects on jobs, income, and housing, one study found that unemployment, job instability, and economic uncertainty are strong indicators of swings in fertility levels (Sobotka et al 2011). Similarly, when a study explored the discrepancy between fertility desires and fertility rates, it concluded that the decline in fertility rates in the United States cannot be explained by changing desires, but rather barriers to achieving fertility goals, such as student debt and costs of housing and childcare (Stone 2018).

Along with studies evidencing declining birth rates, recent polls also indicate changes in fertility desires for younger generations. For example, a 2021 poll by *Pew Research* asked Americans about their plans for kids and found, among those who responded, 44 percent of adults living in the United States indicate no intention of having children, a seven percent increase from 2018 (Pew 2021). A second poll, conducted in 2023 by *Gallup*, found that when American adults were asked about the ideal number of children for a family to have, 45 percent of respondents favor larger families, defined as three or more children, a four percent increase from 2018 and the highest point since 1971. However, the birth rate across the United States remains low compared with the 1970s, suggesting that Americans' views of the ideal family may not be their personal reality (Gallup 2023).

The University of Chicago's *National Opinion Research Center* conducted a survey in 2023 on American perspectives of the current state of the economy and found the majority of Americans who responded are greatly concerned about inflation, housing affordability, health care costs, and the overall cost of living. Approximately 30 percent indicate they are experiencing a major financial strain, with the rest experiencing either a minor financial strain or expecting a financial strain to be evident. The same study found 80 percent of respondents believe the economy is in poor shape and 44 percent indicate their finances are in worse condition than they expected for their current stage of life. Further, 78 percent of respondents do not feel confident that life for their children's generation will be better than it has been for them, with 45 percent believing they do not have a good chance of improving their standard of living (NORC 2023).

Recently, in 2023, sociologists Karen Benjamin Guzzo and Sarah Hayford surveyed groups of individuals born between the years 1981 to 1997 regarding their fertility desires.

Respondents' fertility goals, indicated by the number of children they desired during their late teenage years and early twenties, were analyzed against the number of children they have at the time of the survey and then compared to the responses of older generations, or those born before 1980. The study found that younger generations have similar fertility desires as older generations with a parity of two kids, but the gap between fertility desires and children born has doubled for individuals born after 1980. To explain the widening gap, the researchers shine a light on the economic barriers that younger generations face, concluding that people are choosing to have less children, not because they desire fewer children, but because they cannot afford to have them (Guzzo & Hayford 2023).

Environmental Considerations. In 2022, a group of researchers published findings that Becker's theory of fertility, which explains a positive correlation between income and fertility rates, is no longer valid due to the income-fertility relationship flattening and the education-fertility relationship recovering (Hannusch et al 2022). The findings add complexity to an already complicated collective understanding of what drives fertility behavior. Yet, with the links between education, income, and fertility evolving, factors unaccounted for in previous research may need to be reconsidered. For example, while understanding the fertility intentions of American adults is valuable, the most alarming finding of the 2021 *Pew Research* poll was not the increase in childless households, but that of the respondents who indicated they did not have plans for kids, 56 percent opted to not provide a reason when asked why.

While economic and social barriers place significant burdens on younger generations and their fertility desires, a lesser-known reason to skip having kids is gaining popularity in recent years. Concerns about overpopulation and its impact on the environment has led to some people choosing to not have children or to have less children than originally planned. For decades, the

IPCC has advocated that reductions in population growth significantly reduces overall carbon demand and mitigates climate change. For example, a 2009 study found for each child born in the United States, a woman adds about 9441 metric tons of carbon dioxide to her carbon legacy, which is approximately 5.7 times an average woman's lifetime emissions (Murtaugh & Schlax). Accordingly, a 2017 study conducted by two Canadian climate scientists concluded that having one fewer child is the greatest impact an individual can have on reducing greenhouse gas emissions (Wynes & Nicholas 2017).

This recent phenomenon may be best explained by the *tragedy of the commons*, a theory introduced by Garrett Hardin in 1968 to explain how, in the context of shared resources, when an individual acts solely based on their own short-term interests, which is to take as much of a resource as possible, they are actually acting against the interests of everyone, including themselves, because if everyone were to act solely based on their individual interests, demand for a shared resource would overshadow supply, resulting in the resource eventually becoming unavailable, and society being worse off as a whole (Hardin 1968). Hardin's theory is an example of the Nash equilibrium, illustrating how everyone suffers when individuals choose to act solely based on their own interests. This may partly explain why a trend has emerged among younger generations to limit their fertility desires in the same way they limit their consumption of carbon-intensive household products and recreational activities.

This camp that can be divided into two main categories: those who opt to limit or reduce their lifestyle emissions by having fewer kids and those who choose not to have kids due to uncertainty of what a warming planet means for the prosperity of future generations. For example, a 2018 *Gallup* poll found that 70 percent of adults aged 18 to 34 are worried about global warming, compared to 56 percent of adults aged 55 or older. A second survey conducted

in 2018 by *The New York Times* found 33 percent of the 20 to 45-year-old people surveyed cited climate change as a reason they had or expected to have fewer children than they might have wanted in different circumstances. In addition, a 2022 survey conducted by *The Harris Poll* found that 25 percent of young adults in American think people should stop having children due to the harm it causes to the environment. The same poll found that 58 percent of young adults are concerned about the impacts of overpopulation on the planet with 42 percent believing future generations' quality of life will be poor (Harris 2022).

Climate anxiety, defined by the *American Psychological Association* as "a chronic fear of environmental doom," is on the rise among younger generations. A recent study in *The Lancet* found that, in a global poll of 10,000 people aged 16 to 25, 84 percent of respondents across all countries are at least moderately worried about climate change, with 59 percent indicating they are very or extremely worried and 75 percent stating they think the future is frightening. More than 50 percent said they experience feelings of sadness, anger, guilt, helplessness, and anxiety due to the climate crisis, with almost half saying their feelings negatively impact their daily functioning and 39 percent indicating they are hesitant to have children due to their climate anxiety (Hickman et al 2021). Of course, plenty of studies, including this one, also found financial stress and other economic factors, such as childcare and paid family leave, are significant drivers of fertility behavior. However, the percentage of younger generations citing climate change as an important part of their family planning decisions is steadily growing. Less understood, however, is whether those who cite economic factors as their reason for deciding to have less kids, or remain childless, understand that, based on their experiences of economic and financial instability, climate change is also influencing their fertility intentions, due to global

warming contributing to the increased cost of food, housing, and health care and, in turn, to the overall cost of parenting.

Healthy Communities

In 1992, William H. Sewell, Jr. introduced a new theory of structure through a more precise understanding of the relationship to duality, agency, and transformation. Through his work, Sewell sought to bridge the gap between anthropology's semiotics, or the study of language, symbols, and communication within a society, and sociology's materialism, or the belief that all aspects of society can be explained through natural processes, to restore the concept of human agency to social actors (Sewell 1992). Sewell's theory was largely in response to the work of Anthony Giddens, known for his structuration theory with an emphasis on the duality of culture, or the understanding that while people shape structure, structure determines what people do, and two important works, *The Constitution of Society* (1984) and *The Consequences of Modernity* (1990). While Giddens acknowledges the transformative nature of globalization on societies through interconnectedness, he highlights how global processes erode local cultures, along with exacerbating environmental degradation, economic inequalities, and political instability (Gidden 1990).

Sewell expands on this idea by organizing structures based on two components, the power dimension, which encompasses resources, and the depth dimension, which comprises cultural rules and norms, and by arguing that both dimensions must "mutually imply and sustain each other over time" in order for a structure to exist (Sewell 1992, p.13). The introduction of resources into structure is important for a couple reasons. First, Sewell argues that resource consequences are unpredictable in the advent of a cultural rule and, second, that because

resources mean different things to different people, leading to varying degrees of interaction, the impact to resources from change in cultural norms is measured both by nature and interpretation. Sewell believed that structures overlap and that it is social actors through their transformative capacity that determine how rules are implemented and how situations are perceived. In the context of societal structure, Sewell's understanding of human agency is an "actor's capacity to reinterpret and mobilize an array of resources in terms of cultural schemas other than those that initially constituted in the array," which results in the empowerment of individuals to not only cooperate with others through structures but also to use structures against others or, in his words, "Agency arises from the actor's knowledge of schemas, which means the ability to apply them to new contexts" (Sewell 1992, p. 20).

A decade later, in 2005, Sewell presents a controversial argument critiquing the classical approach to structure and culture by highlighting the importance of historical events in shaping structures over time, resulting in the measure of structural changes in the context of historical happenings being critical for understanding the relationship between society and institutions (Sewell 2005). Both Sewell's emphasis on the power of resources in social structures, along with the role of historical events and the social actors who shape them, and Gidden's explanation of the benefits and detriment of societal development can be viewed through Sen's and Nussbaum's capabilities approach. Here, poverty is considered a deprivation in a human's capability to realize a good life while development is considered an expansion of humanity's capability to lead prosperous lives. Therefore, if a societal structure prevents a person from realizing their fertility desires, then does it also deprive them of their capability to lead a good life, measured by social structures in the form of access to resources, changes in cultural norms, and the social actors who distribute and interpret them?

Adequate, Nutritious Food. The United States Department of Agriculture (USDA) defines food insecurity as "a household-level economic and social condition of limited or uncertain access to adequate food," while dividing those households experiencing food insecurity into two categories: households experiencing low food security, defined by "reports of reduced quality, variety, or desirability of diet," and those experiencing exceptionally low food security, defined by "reports of multiple indications of disrupted eating patterns and reduced food intake" (USDA 2024). In 2022, 170 million households in the United States were found to be food insecure, a significant increase from 135 million in 2021 (Rabbitt et al 2023).

The United States Department of Health and Human Services (UHHS) recently published a report explaining how food insecurity can be experienced temporarily or over long periods of time, while also being influenced by several different economic, social, and political factors. Economic factors, such as unemployment and low wages, contribute to food insecurity by making it more difficult for households to purchase adequate food for all family members. In addition, with high unemployment rates, particularly among low-income populations, barriers to adequate nutritious food are increased further. Accordingly, studies show that children living in households with unemployed parents have higher rates of food insecurity than children living in households with parents who are gainfully employed (DHHS 2024).

Research on contributors to food insecurity in the United States is vast and deep, implicating systemic issues, such as discrimination, education, affordable housing, and transportation, as drivers of increased poverty rates and segregated neighborhoods, which lead to decreased access to adequate nutritious food. For example, disabled adults are at a higher risk for food insecurity due to limited employment opportunities and health care-related expenses that reduce income available to purchase nutritious food. Food insecurity can also occur due to a lack

of transportation or inadequate public transportation, making it difficult for people to access healthy food options in other neighborhoods. Further, the relationship between transportation and food security tightens when long distances exist between households and full-service grocery stores. Households in urban and rural areas, those closely correlated with low-income neighborhoods with limited transportation, are also likely to be located in food deserts, or areas without access to full-service grocery stores, which results in residents being forced to rely on convenience stores, with higher food prices, lower-quality foods, and less variety of foods, as their main source for groceries (DDHS 2024).

Plenty of studies evidence how the role of social institutions and structural discrimination significantly influence which households will experience food insecurity, as the households more likely to live in food deserts and lack access to transportation are often those also living with chronic diseases or disabilities, residents of rural areas, and members of racial and ethnicity groups. For example, in 2022, 22.4 percent of Black households and 20.8 percent of Hispanic households were found to be food insecure, compared to 9.3 percent of white households and 10.5 percent of households nationwide (USDA 2024). However, while the link between food insecurity and race, ethnicity, and disability status is well-researched and documented, the relationship between food insecurity and social factors is one of correlation, not causation.

Food insecure households are caused by the inability to obtain adequate nutritious food, likely caused by income level, not an individual's race or physical ability. For example, in 2022, 36.7 percent of households determined to be low-income were also found to be food insecure, compared to the national average of 12.8 percent (USDA 2024). Yet, it cannot be ignored that systemic racism and discrimination create additional barriers to financial gain for some individuals based on their race, ethnicity, and disability status, which means that minority

households are discriminated against in the job and housing markets resulting in decreased levels of income and, therefore, less money to buy food. Importantly, however, is the clarification that being Black or living with a disability is not the reason an individual experiences hunger; hunger is caused by not being able to purchase adequate, safe and nutritious food.

Along with social factors, political factors, such as public policy, globalization, and international conflict, also contribute to food insecurity by determining food availability, accessibility, and affordability. With the consolidation of the food industry from globalization, supply chains are now at greater risk of disruption, leading to higher food prices and associated rates of food insecurity for households globally. For example, in 2019, the number of households determined to be food insecure was 135 million. Within three years, with a jump to 170 million, an additional 35 million households were found to be experiencing food insecurity, likely from consequences from failing crops and supply chain disruptions caused by the war in Ukraine, the aftermath of the COVID-19 pandemic, and climate change, which all contributed to pushing food prices to all-time highs (Rabbitt et al 2023).

Accessible, Comprehensive Health Care. Access to affordable, comprehensive healthcare in the United States continues to be a challenge for many communities. In addition, a multitude of economic, political, and social factors and inequalities affect health outcomes, such as how discrimination, racism, lack of affording housing, lack of education, and limited access to services can contribute to poor health outcomes. Healthcare insecurity can also occur due to geographical factors such as living in a rural area, which can make it difficult to access health care services and treatments, along with decreasing the quality of service obtained.

The health of all communities depends upon not only access to and quality of health care, but also social determinants of health, which are factors that impact a person’s environment and

ability to access health care, purchase healthy foods, and care for oneself. In 1998, researchers Michael Marmot and Richard Wilkinson, together with the World Health Organization (WHO), established the *Social Determinants of Health*, a framework to explain why discrepancies in health outcomes among populations are better explained by social factors, not by differences in quality and frequency of health care. Through their research, Marmot and Wilkinson discovered that the impact of where a person lives and the experiences they have based on their social class is a such a strong indicator of health that when a person changes their social and cultural environment, their risk of disease changes. However, the relationship between health and social status is not based solely on income, but rather on all the elements that comprise the socioeconomic spectrum. In other words, a person's health status does not determine their position in society, instead, a person's social position determines their health status (Wilkinson & Marmot 1998).

Included in Wilkinson and Marmot's original framework (1998) is a list of social determinants of health, including stress, social exclusion, social support, work, unemployment, food, addiction, and transportation. Today, *Healthy People 2030*, a campaign funded by DHHS through the Office of Disease Prevention and Health Promotion (ODPHP), organizes the social determinants of health into five domains, namely economic stability, education access and quality, health care access and quality, neighborhood and built environment, and social and community context. In addition, health insurance status is a key factor impacting health care insecurity, as individuals with chronic health conditions may require more frequent and expensive health care services, and lack of adequate insurance coverage contributes to health care insecurity, as individuals may not be able to afford the cost of health care services and treatments (DDHS 2024).

However, along with social, political, and economic drivers of health, emerging research illustrates a direct link between hotter temperatures and poorer health outcomes, including worsening malnutrition and increasing risk of infectious disease due to microbes thriving in warmer environments. For example, in 2023, *The Washington Post* teamed up with *CarbonPlan*, a nonprofit investigating the effects of climate change on the modern world, to produce the *Human Limit*, a series of articles on how human populations respond to heat. *CarbonPlan* leveraged wet-bulb globe temperature, which considers air temperature, humidity, radiation, and wind speed using historic heat data applied to NASA's latest climate projections, to measure how heat stresses the human body in 15,500 cities around the world and reported their observations over several weeks (Post 2023).

The findings are frightening. Among them is evidence of climate change-induced heat stress causing widespread infectious disease outbreaks, increased malnutrition, rampant homelessness, and uncontrollable migration, with historically marginalized populations suffering the most. For example, in Yemen, where the City of Hodeida is impacted by extreme heat more than any large global city, heat, hunger, and health go hand-in-hand. Emerging research indicates that children suffer from both the indirect impacts of elevated temperatures, like crop failures that affect their diets, and direct effects, like heat exhaustion, heat stroke, and dehydration. Further, families living in extreme heat and experiencing the lasting impacts of poorer health and decreased nutrition are poised to spiral deeper and deeper into poverty. In the United States, extreme heat is already a leading cause of death, killing an average of 8,500 Americans per year, more than all other weather-related deaths combined. *CarbonPlan* predicts this number to increase to 59,000 by 2050, with the highest risk areas located in Southern California, southwest Texas, and southwestern Arizona (Post 2023).

Safe, Affordable Housing. As every economist knows, the most basic factor that determines housing prices is the balance between supply and demand, which is largely driven by economic stability. When the economy is strong and unemployment is low, people are more likely to have the financial means to buy a home, which can drive-up housing prices due to an increase in demand. Conversely, when the economy is weak and unemployment is high, people are less likely to be able to afford a home, which often lowers housing costs. A similar effect can be found with interest rates that determine how affordable it is to borrow money which, in turn, drives demand and the resulting impacts to supply.

However, while most changes in the housing market can be explained through supply and demand, what is more complicated is identifying and understanding what is driving changes to supply and demand. For example, other demographic trends, such as population growth, disaster declarations, and migration patterns, impact the housing market, as well. When a city or region experiences a rapid increase in population, which could be caused by rural to urban migration or a geospatial-specific industry boom, demand for housing increases, which drives up housing prices and decreases the supply of houses for sale, along with decreasing the availability of affordable housing. Further, government policies such as zoning regulations, taxes, and subsidies, also drive housing prices, along with the segregation of communities, which, in turn, can affect housing affordability for certain populations.

Each year, *CoreLogic* releases its annual Climate Change Catastrophe Reports which highlight how climate change impacts the housing market from damages caused from wildfire, hurricanes, flooding, and other severe weather events. Recent reports show the increasing frequency and severity of extreme weather events exacerbate the housing crisis by reducing the supply of affordable housing and increasing housing and related costs. For example, in 2022, one

in ten homes located in the United States, equating to more than fourteen million properties, was damaged by a climate disaster (CoreLogic 2023). Further, in 2023, when a devastating wildfire tore through the island town of Maui, Hawaii, over 100 lives were lost and more than 2,200 structures were burned to the ground, mostly affordable housing, contributing to over $5.5 billion in property damage and leaving over 7,000 residents in need of shelter. To help combat the pending housing crisis, the Governor of Hawaii signed an emergency proclamation making it illegal to make an unsolicited offer to purchase property in three West Maui zip codes affected by the wildfire (NPR 2023).

While this proclamation may seem odd to some, the aftermath of a climate disaster is often met by property development companies moving quickly to purchase land from vulnerable individuals who find themselves in a financial predicament with their house suddenly destroyed or severely damaged, inadequate insurance coverage, and too little savings to fill the gap. Climate disasters are a catalyst for a new or deepening housing crisis as developers easily snatch up properties abandoned by residents without the means to rebuild, resulting in decreased availability of affordable housing and increased housing costs. For example, in September 2021, *NPR* reported that Sonoma County, California, a high-risk area for wildfires, has seen its median home price rise more than 40 percent in recent years. Similarly, El Dorado County, California, a small community next to Lake Tahoe known for its wildfires, has seen its median home price rise almost 60 percent over the last five years. Yet, is the average American family considering climate change as it budgets for rent or mortgage payments?

Recent changes to the insurance industry have added even more complexity to rising housing costs. In July 2023, Farmers Insurance announced it would not renew a third of homeowners insurance policies in the State of Florida and would limit new policies in California

due to worsening climate disasters. The announcement came a couple months after State Farm Insurance announced it would not renew tens of thousands of policies in California and only one month after Allstate Insurance declared it would no longer provide home or commercial policies in the state due to worsening climate events (Flitter 2023). In addition, the Deloitte Center for Financial Services found that severe climate-related disasters in the United States escalated by 32 percent between 2019 and 2022, leading to insured losses rising by nearly 300 percent over the four-year period (Deloitte 2024). Further, a 2023 *Policygenius* Home Insurance Pricing Report found that homeowners in several disaster-prone states saw an average 50 percent increase in housing insurance cost since 2021 (Howard 2023). In January 2024, Deloitte surveyed 2000 homeowners across 21 states associated with high climate risk and found that dwindling insurance coverage and soaring costs has led to 25 percent of respondents choosing to go without adequate homeowner's insurance. As more and more homeowners living in high climate risk regions are unable to secure adequate housing policies, the adverse impacts of extreme weather events on the housing market will only get worse.

Healthy Economies

In 2020, the Commodity Futures Trading Commission (CFTC) published a report on climate risk in the United States financial system concluding that climate change poses systemic risks to the financial system, affecting multiple sectors, geographies, and assets. The report further concludes that while climate-related financial risks are large, they are unpredictable as climate change is shifting fundamental environmental parameters, pushing planetary systems to new extremes, and positioning variables such as economic growth, crop yields, and labor productivity to deteriorate quickly and suddenly. Strong, vibrant economies of scale are critical for the prosperity of civilizations, yet the CFTC found that climate change reduces labor capacity

and productivity, which, in turn, negatively impacts agricultural yields even more (Martinez-Diaz & Keenan 2020).

In fact, based on recent reports, climate change is trending towards $4.65 billion in annual productivity losses for the United States agriculture industry by 2030. Physical impacts on crop yields are predicted to compound with reduced labor productivity, resulting in significant declines in staple crops, such as a 10 percent decline in corn by 2050. Importantly, along with soy and wheat, corn comprises over 60 percent of harvested crops in the United States and all three crops are vulnerable to heat, while also being key to growing seasons throughout the United States, which, without adaptation measures, will experience substantial losses from a warming climate. Rising temperatures in key agricultural regions across the United States are even leading some farmers to harvest in middle of the night to safeguard the quality of their crops, along with the health of their workers (Jägermeyr et al 2021).

Accordingly, current research shows that without meaningful action to reduce emissions or adapt farming to extreme temperatures, labor productivity losses are expected to reach approximately $500 billion by 2050, which corresponds to about 0.5 percent of projected GDP by 2030 and one percent by 2050. In other words, in a business-as-usual scenario, the year 2050 could bring projected losses of 0.5 percent of Gross Value Added (GVA) for 80 percent of American counties, which comes with a price tag of about $5 million per year for 86 percent of counties located in the United States. Further, by 2090, total impacts from extreme heat caused by global warming will result in over two billion lost labor hours, which corresponds to $160 billion in lost wages for American households (Martinez-Diaz & Keenan 2020).

The Cost of Growth. Following the Industrial Revolution, as industrial activity increased and innovation advanced, employment opportunities and household incomes also increased,

which resulted in the ability to make goods faster and cheaper, lowering the costs of consumer goods and increasing global consumption. Further, as consumption grew, so did the demand for more household goods, leading to the expansion of industrial development. And as manufacturing expanded, so did the reliance on fossil fuels, which led to an explosion of global greenhouse gas emissions, the onset of global warming, and the beginning of anthropogenic climate change.

For decades, humanity's impact on the environment has been evaluated through the lens of an ecological footprint. First referenced in 1998 by Mathis Wackernagel and William Rees in *Our Ecological Footprint: Reducing Human Impact on the Earth*, an ecological footprint measures what is required of the planet to sustain an individual, a family, a community, or an economy based on the number of natural resources relied upon for the goods and services that comprise each lifestyle. In other words, an ecological footprint evaluates population and consumption against the capacity of nature. The model is commonly used to analyze consumption per capita based on four categories: energy, built environment, food, and forestry products. Based on this measurement, at the turn of the millennium, research suggested that humans had already overshot the planet's capacity by twenty percent, with humanity's collective ecological footprint expanding 80 percent during the last 40 years of the twentieth century, most due to the industrial revolution. Further, based on this model, the United States has the greatest environmental impact of all countries, responsible for about a fourth of global emissions caused by human activity with only about four percent of the world's population (Hammond 2006).

However, the idea that economic development and associated industrial activity, represented by increased emissions, negatively correlates with the health of a society is a recent revelation, not an accepted truth by classical economists. Conversely, during the 1950s, Simon

Kuznets introduced the idea of the Kuznets curve, which illustrates how as economic development increases, inequality first increases and then decreases as market forces redistribute income. While many studies have disproven this theory, showing that there is no evidence of inequality reversing as economic growth continues, the curve was repurposed in 1991 to apply a similar theory to the environmental degradation. The Environmental Kuznets Curve, known as EKC, theorizes that, again, as economic development increases, environmental harm first increases but then decreases due to market forces placing higher value on environmental attributes, such as clean air, clean water, and temperate climate conditions. The main inference from the 1991 study is that, since increased economic development will at some point decrease environmental harm, any effort to limit economic growth will have the opposite effect on the environment, meaning that by reducing economic development, environmental harm will eventually increase more (Mazurek 2011).

Yet, in 2019, after analyzing data from a 32-year period in 160 countries, two researchers discovered a positive correlation between economic growth and carbon emissions, but only up to a certain point, when economic growth, measured by GDP per capita, reverses course and begins to decrease as emissions continue (Wang & Li 2019). Building on these findings, a second group of researchers in 2023 examined data from the ten countries with the highest rates of emissions to better understand the relationship between long-term economic growth and carbon emissions. The group had similar findings, concluding that in order for economic growth be sustained, the global economy must transition away from fossil fuels towards carbon neutrality by embracing renewable energy sources (Khan et al 2023).

With decades of research evidencing the growing inability for the planet to sustain human life measured by modern industrial activity and consumer behavior, most economists and

policymakers disagree about what, if any, changes to economic development are required. A study in 2012 by researchers Cameron Hepburn and Alex Bowen explored this question by analyzing the viability of three schools of thought on environmental limits to economic growth, organized by those who believe growth is boundless, those that think natural resource depletion will place conditions on growth, and those who argue that growth cannot continue indefinitely. Ultimately, the researchers conclude that continued growth is feasible, but not without a decoupling of economic development and adverse impacts to the planet, highlighting the belief that technological advances through an expansion of the intellectual economy will bring about the change needed by the year 2050 (Bowen & Hepburn 2012).

While solutions baked by time and advances in technology are difficult to quantify, the need for economic growth to distinguish itself from environmental harm is easy to measure. In 2023, the IPCC concluded that four industries are responsible for 80 percent of global emissions, namely power generation, industry, transport, and buildings, with agriculture and forestry responsible for the remaining 22 percent. The findings build upon a 2021 report that links 100 fossil fuel companies to 71 percent of global industrial emissions since the IPCC formally recognized human-induced climate change in 1988. The same report found that, since that time, over 50 percent of global industrial emissions have been caused by only 25 companies (Megura & Gunderson 2022). While technology advancements bring hope for emission abatement and capture, emerging research suggests that technology alone with not solve the climate crisis, which is a deeply rooted systemic problem that requires transformational systemic solutions.

Climate Equity. With all the reports, studies, and unequivocal scientific evidence that human-caused climate change is happening, it is getting worse each year with increased adverse impacts to adequate, affordable food, housing, and health care, and its consequences threaten the

very livelihood of families, communities, and societies, why then is more not being done to address the climate crisis? An important part of the conversation around climate change is understanding the difference between the population who are bearing the consequences of a changing climate and those who has the power to make public policy and private industry decisions to influence the rate of climate change and its associated impacts. The speed (or crawl) to market with climate solutions may be best explained by the (unequal) distribution of climate impacts.

The consequences of a warming planet, such as extreme flooding, wildfires, failing crops, and infectious disease, are felt more strongly by low-income communities of color, those already at risk of food, housing, and health care insecurity. For example, a 2023 study found that systemic historic and persistent racist policies push Black and Latinx households into areas more prone to flooding, with higher levels of pollutants, and with worse housing conditions, making these households more susceptible to climate change effects. The study analyzed the District of Columbia's housing market and found that climate change crises disproportionally affect renters, residents with low incomes, and Black and Latinx households, even though less dense neighborhoods and wealthier households contribute higher levels of greenhouse gas emissions on average. In addition, Black and Latinx households and those with lower incomes are also more likely to be energy insecure and unable to afford proper heating and cooling for their homes (Burton 2023).

Climate equity, or climate justice, seeks to address the ways marginalized communities are disproportionately affected by the impacts of climate change and the lack of access to resources and opportunities to adapt and mitigate these impacts. The concept is also not new. In fact, researchers, community leaders, and scientists have pointed out the unequal distribution of

climate impacts for decades. In 2002, a group of environmental justice advocates came together to publish the Bali Principles of Climate Justice, which focus on four main canons to: (1) reject the "growth-based model of economic development that has produced the climate crisis"; (2) denounce the unequal distribution of the consequence of our reliance on fossil fuels which results in the disproportionate adverse impacts to historically marginalized communities; (3) pursue procedural and participatory justice, which advocates for direct participation in the decision-making process by those deemed to be most affected by the outcome; and (4) call for corrective justice "through the transfer of resources from those with historic responsibility for climate change to those most susceptible to its consequences" (Gonzalez 2021, p. 113).

Rethinking Classical Economic Theory. In 1949, French political economist Georges Bataille introduced a new economic theory called the *general economy theory* which revolves around Bataille's approach to consumption and his concept of the *accursed share*. In a departure from classical economic theorists motivated by restriction and scarcity, Bataille believed that in all economies exists an accursed share, or an excess of energy that can be leveraged for productive growth, through consumption of art, culture, or other leisure activities deemed acceptable by a society, or spent in lavish, gluttonous, unproductive means, such as war. Regardless of how the excess energy is spent, Bataille argues that the accursed share is always destined for waste within the general economy, but how this excess energy takes shape informs the understanding of "luxury" within a society. Most importantly, the concept of excess energy was developed by Bataille following his reflection on the indigenous tradition of the potlatch, a celebratory gift-giving custom practiced by several First Nations and also known as the revered Lakota Give-Away ceremony.

Understanding how a society translates excess into luxury is an important measure of how "good" the society is, or, based on the views of Joseph Berliner (1999), an economy's arrangement of citizens as consumers and as workers and the balance between the distribution of property and the opportunity for human development. Berliner believes that the failure of all socialist economies is inevitable due to the absence of free markets, and that a sustainable good society can only be established as a properly managed market driven by competition and governed by democracy (Berliner 1999). Interestingly, Berliner does not include "growth" as an essential element in his vision of a good society, which begs the question: can a good society be established by a competitive market and sustained without growth if consumer preference changes?

In 2011, theorist Shann Turnbull, in response to his own plea that society desperately needs a new kind of market economy, one that is not only economically prosperous but also environmentally responsible and societally good, offered *ecological capitalism* by pointing out that the modern understanding of a sustainable global good society is at odds with traditional economic policies, those which require full employment of the labor classes and boundless extraction of natural resources. First introduced in Hardin's *Tragedy of the Commons,* the idea of a new economic system that achieves prosperity without growth is a compelling one. However, the addition of "capitalism" in the name seems to step away from Hardin's original premise, as does the concept of *sustainable capitalism,* introduced by Al Gore, former Vice President of the United States, and David Blood, an experienced investment banker, in their publication, *A Manifesto for Sustainable Capitalism,* and through the founding of their new sustainable investment firm, Generation Investment Management (Gore & Blood 2010). Sustainable capitalism is presented as a new form of capitalism that integrates environmental, social, and

governance (ESG) considerations into a firm's decision-making and aspires towards sustainable growth.

However, shortly following the new venture's announcement, John Fullerton, an experienced impact investor, took to his blog to decry the idea of "sustainable growth" as an oxymoron. Fullerton argues that "despite all the advances in technology leading to resource productivity improvements, and assurances from many otherwise intelligent economists, there is no evidence of a decoupling between GDP growth in the aggregate and the absolute material throughput of the economic system" (2010). Instead, Fullerton advocates for *regenerative capitalism,* or the need to look beyond net-zero emissions to a net-positive impact on the planet. In his 2015 publication, Fullerton introduces the eight principles of regenerative capitalism, namely: (1) the human economy is embedded within natural ecosystems; (2) the measurement of wealth goes beyond what can be reduced to money; (3) innovation and adaptation are key to societal health; (4) economic prosperity depends on the empowered participation of those impacted; (5) culture, traditions, and histories both form and nurture a healthy economy; (6) the edges of systems hold the greatest value for creativity, innovation, and transformation; (7) a healthy material economy is also a robust circular economy; and (8) balance is the key to systemic health.

Fullerton grounds his theory of regenerative capitalism in the idea of a *post-growth economy,* first introduced in 2009 by James Speth, an American policymaker. According to Speth, in a post-growth economy, families, communities, and the environment, will not be sacrificed for private sector growth in the name of progress. Instead, the idea of boundless economic growth, normalized as an inevitable, necessary part of progress and an excuse for not addressing long-term social needs, will cease to have a following. Rather, in a post-growth

society, the focus will be less on consumption, market capitalization, and maximizing shareholder value, and more on addressing the needs of families, communities, the environment, and all of society to improve the overall quality of life for all its citizens (Speth 2009).

The idea that boundless economic growth is not sustainable may best be explained by the work of Johan Rockström (2009), a Swedish scientist who introduced a framework to measure the preconditions for human development through a set of nine interlinked planetary boundaries that define the safe operating space for humanity with respect to the system of Earth and its subsystems and associated ecosystem services. Rockstrom argues that, by crossing the boundaries, systems of the planet shift with potential disastrous consequences for humanity. As of 2023, six of the nine boundaries have been crossed, namely climate change, change in biosphere integrity, land-system change, altered biogeochemical cycles, introduction of novel entities, and freshwater change, with three planetary boundaries remaining intact but in imminent danger of being crossed: ocean acidification, atmospheric aerosol loading, and stratospheric ozone depletion (Rockström et al 2009).

Building upon Speth's and Rockstrom's theories, economist Kate Raworth (2017) introduced *Doughnut Economics* as an alternative to classical market-focused economics models. Instead, Raworth's model measures progress as a balance between meeting basic human needs, defined as the social foundation derived from the SDGs, and honoring Earth's ecological limits, defined as the ecological ceiling formed by the nine planetary boundaries. Complementary to Raworth's model, are Smith's *invisible hand*, Bataille's *excess of energy*, and Nietzsche's *test of the eternal return* that may offer an alternate path, one more ethical and sustainable, for measuring prosperity (Retsikas & Marsden 2018). For example, a recent 2023 study analyzed responses from the governments of the 38 Organization for Economic Cooperation and

Development (OECD) countries following extreme weather events and found that in countries with high levels of economic activity, an increase in harm or the perceived threat of harm caused by climate disasters is positively associated with an increase in innovation leading to sustainable development (Ma et al 2023). Yet, how much closer to the SDGs would the world be with a collective understanding of what truly benefits the public good, how overconsumption associated with luxurious lifestyles is harmful to the greater good, and why the actions of society today will live on in perpetuity for the good (or detriment) of future generations?

While some may derive hope from the results of emerging research, the findings confirm that drivers of change continue to be tied to indicators of productivity and capital gain, which increasing "treat as a derivate the things we actually value, including not only economic wealth and the distribution of income, but also other dimensions of prosperity: social solidarity and participation, personal agency and opportunities, and environmental sustainability" (Dirksen et al 2022). However, even within this perspective, there continues to be a polarization between what is good for business and what is good for society. In 2021, economics professor Alex Edmans challenges the traditional view that value generated by capitalism is a fixed pie in his book *Grow the Pie*. Edmans argues that any slice given to stakeholders at the benefit of society, is not at the expense of shareholders or profit, and vice versa. Instead, by investing in society, a company can grow the pie, which ultimately benefits everyone, including shareholders, in the long-term.

More promising is a new theory of sustainable growth, also introduced in 2021, that explores the relationship between fertility desires, resources, and technology to create pathways towards an economic model that is no longer dependent upon economic inputs in the form of natural resources. The theory, formulated by economist Pietro Peretto, outlines three phases of economic conditions that lead to an evolution of natural resource extraction towards

technological advancement to transform economic growth measured by the accumulation of physical assets. Instead, prosperity is measured based on the accumulation of knowledge as the primary driver of economic growth, compelled by not only technological advancement, but also deeply rooted institutional transformation (Peretto 2021).

While many theories have been introduced to address the environmental and social harm associated with a capitalistic system and the idea that expansion is necessary for survival, few are willing to acknowledge the inconvenient reality that boundless economic expansion is not sustainable, and that any economic theory that claims to address the environmental degradation associated with industrial growth must also implicate the societal transformation needed to truly be a sustainable society. In 2022, a group of researchers poignantly proclaimed that the devastating impacts of climate change are more of a consequence of the humanmade vulnerability to extreme weather events and less due to uncontrollable climate hazards. Outlining the many ways in which climate disasters are a result of environmental hazards intersecting with vulnerability, such as poor urban planning, a lack of social support programs, or an inadequate healthcare system, the researchers argue that a "conceptual re-orientation is a necessary starting point to identify and leverage structural, systemic, and enabling solutions that transform societies to be more equitable and resilient in the long term" (Raju et al 2022, p. 2).

Indeed, we need a new form of capitalism grounded in sustainable, responsible practices and a circular economy that seeks to preserve humanity and the planet while not forgoing the value of economic prosperity. We need a new method for balancing supply, demand, and economic governance, while applying the values of sustainability to the social aspects of a capitalist system, one which will provide a new way of thinking about industry growth and long-term viability to encompass the ideals of both capitalism and sustainability, without sacrificing

the value or compromising the principles of the other. However, to establish a new model of prosperity, we must first better understand the relationship between climate and prosperity.

Chapter 3, Section II: The Impacts of a Changing Climate on Prosperity

The relationship between economic development and harm to the environment and communities has long been debated by economists, sociologists, and policymakers. However, increased knowledge of the relationship between climate change and the cost of housing, food, and healthcare, all of which are critical for maintaining the health of families, communities, and economies, is needed. As climate change continues, impeding access to adequate food, housing, and health care, barriers to full bodily autonomy also increase, causing interference in family planning. Yet, how climate change influences fertility desires, and how the impediment of fertility desires infringes upon the health of families, communities, and economies, needs to be explored further. In addition, based on the theory of prosperity, what role does society assign to healthy families, communities, and economies in realizing prosperity? Based on the understanding of the relationship between climate change and healthy families, communities, and economies, what is the role of corporate expansion, as both a driver of climate change and an enabler of economic development, in realizing prosperity? Further, what is the role of public policy in promoting, protecting, and advancing prosperity? The implications of these questions can no longer be ignored.

Exploring the Relationship between Climate Change and Prosperity

To better understand the relationship between climate change and prosperity through the lens of healthy families, communities, and economies, I conducted a quantitative analysis, leveraging secondary data sources, to explore the link between a changing climate, measured by

changes in soil moisture content levels, increased surface temperatures, and higher occurrences of extreme weather events; the cost of raising children, measured by increases in food prices, housing costs, and health care expenditures; and barriers to full bodily autonomy, measured by the ability to fulfill fertility desires, or ability for individuals and couples to freely choose to not have a child, to have a child, and to raise children in a healthy environment. Building upon the literature discussed throughout chapters one, two, and three, all four models examine the relationship between climate change, reproductive justice, and the prosperity of families, communities, and economies, measured by how climate conditions correlate with living expenses and, ultimately, birth rates.

Using a fixed effects linear regression model, I analyzed state-level panel data for the 48 states that comprise the contiguous United States over a twenty-five year period, from 1997 to 2021, to develop four models using *R*, an environment for statistical computing, and its panel linear model (plm) function, a linear regression model designed for use on transformed panel data and fitted as fixed effects within the model, to examine the relationships between environmental, social, and economic conditions among the variables. Hawaii and Alaska were excluded as outliers from all four models due to geographical location outside the contiguous United States In addition, data from the Bureau of Economic Analysis's (BEA), an agency within the Department of Commerce, Consumer Price Expenditure (CPE) Index by State, a consumer expenditure index which tracks consumer spending in urban areas at the state level and organized by expenditure type, is adjusted for inflation using the United States Bureau of Labor Consumer Price Index (CPI), before being used in the modeling. Economic recession, defined as a state of national economic recession inferred by the GDP-based recession indicator from Federal Reserve Economic Data (FRED), is included as a control variable in each model

represented by the number of quarters spent in economic recession each calendar year on a scale of 0 to 4, organized by year for the years 1997 to 2021. Model four also controls for the fertility rate at the state level, which represents the number of females aged fifteen to forty-four in the current population.

My first hypothesis considers how one component of climate change, measured as the level of moisture found in soil during agricultural planting and harvesting seasons, impacts one component of reproductive justice, defined as the cost of food. In model one, I examine the link between climate change and food insecurity by exploring the relationship between the average annual change in soil moisture content levels, measured by both drier conditions caused by prolonged drought and wetter conditions caused by increased flooding, and the price of consumer goods, measured by annual food expenditures, defined as food and beverage purchased for consumption off-premises, which effectively excludes expenditures purchased at restaurants, fast food joints, cafes, and bars. Model one utilizes data from National Oceanic and Atmospheric Administration (NOAA), which maintains a database on average soil moisture levels throughout the United States based on 344 land surface monitoring sites and estimated by a one-layer hydrological mode, and BEA CPE Index by State, which measures annual changes in consumer spending in a multitude of expenditure categories, including money spent on food and beverage for off-premise consumption, or in other words, groceries. Table 1 summarizes model one's hypotheses and variables.

Table 1. Model 1 Hypothesis and Data

Hypothesis 1	Independent variable	Dependent variable	Controls
H1: As soil moisture levels increase during planting and decrease during harvest, the	**IV1a:** Average monthly soil moisture level during planting season	**DV1:** Average annual food expenditures	Economic recession

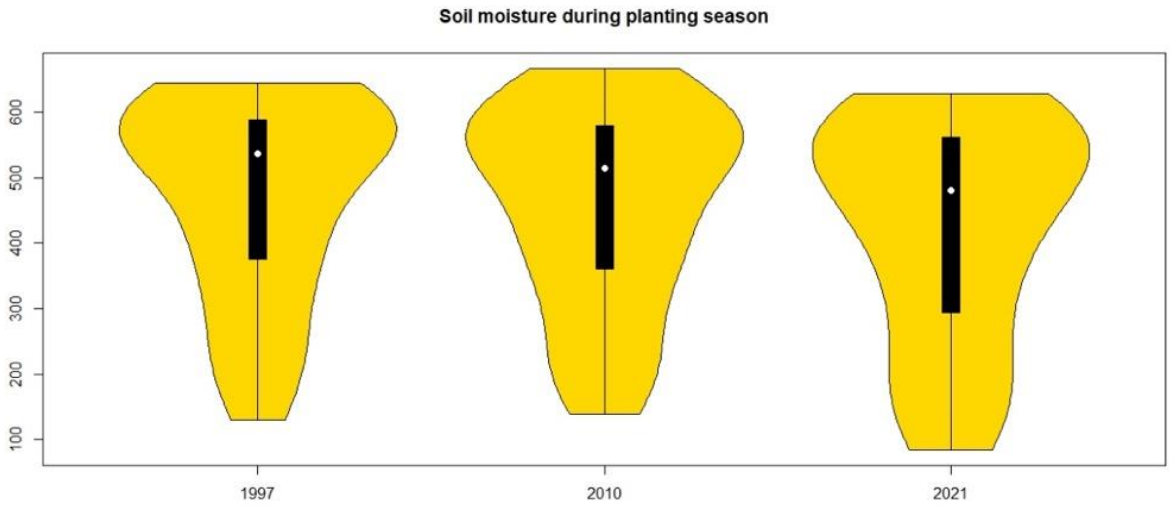
cost of food will increase.	**IV1b:** Average monthly soil moisture level during harvest season		
Variable description	1a: Annual average planting soil moisture content at the state level during the month of April 1b: Annual average harvest soil moisture content at the state level during the month of October	Annual cost of food, or the average cost of food and beverage expenditures at the state level, defined as those purchased for off-premises consumption combined with the cost of food produced and consumed on farms, divided by the population	Number of quarters spent in economic recession at the national level for each calendar year on a scale of 0 to 4

For the first part of model one, the independent variable is the annual average planting soil moisture content level and is based on data from NOAA's 344 surface monitoring sites, calculated by averaging the daily measurements for the month of April of all surface monitoring sites located within a state to produce an annual April soil moisture content level measurement for each state across the contiguous United States The end result is the average soil moisture content level during the month of April measured in millimeters by soil depth and organized at the state level by year for the years 1997 to 2021. The month of April was chosen for planting season as it is the month most often associated with planting activities in agricultural communities.

Figure 1a shows the state-level difference for the average soil moisture content level during the month of April measured in millimeters by soil depth for the years 1997, 2010, and 2021. Overall, soil moisture content during planting season has been steadily declining over the last twenty-five years, with the variance across the contiguous United States becoming more pronounced. In 1997, the average soil moisture content level across the contiguous United States during the month of April was 468.5 millimeters. Twenty-five years later, the average soil

moisture content level during the same month of the year dropped to an average 420 millimeters. During planting season, Nevada has historically had the lowest levels of soil moisture with Rhode Island and Tennessee having the highest levels. However, in 2021, the State of Mississippi had the highest soil moisture content level during planting season at 628.5 millimeters, with Nevada having the lowest at 84.3 millimeters. Sharp decreases in several states, including California, North Dakota, South Dakota, and Idaho, took place over the last few years with decreases as high at 155 millimeters over just a twelve-month period.

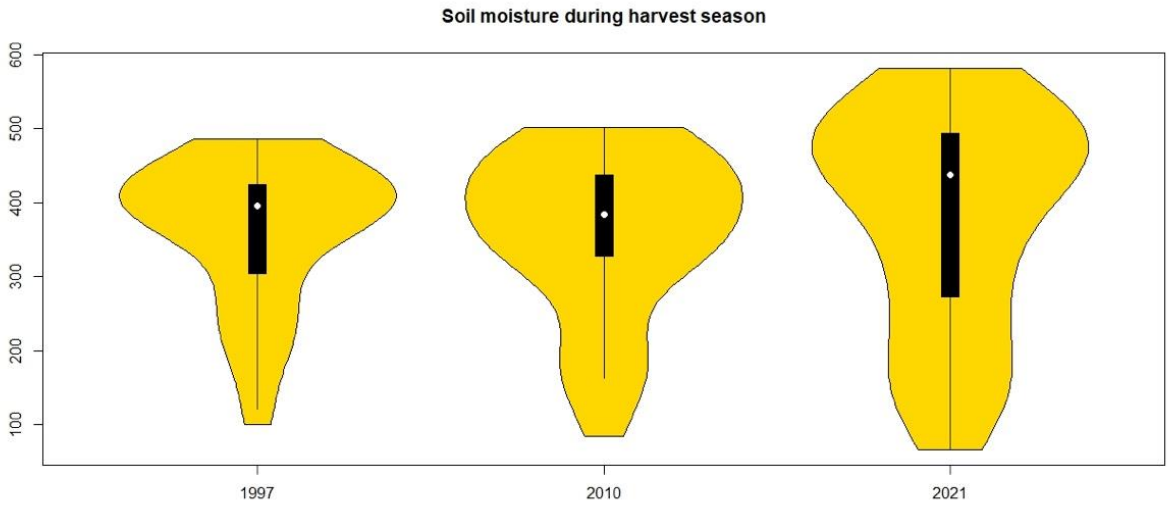
Figure 1a. Average Soil Moisture during the Month of April



For the second part of model one, the independent variable is the average harvesting soil moisture content level and is calculated using the same approach as model 1a but for the month of October. The month of October was chosen for harvest season as it is the month most often associated with harvesting activities in agricultural communities. Figure 1b shows the state-level difference for the average soil moisture content level during the month of October, measured in millimeters by soil depth for the years 1997, 2010, and 2021. Based on data for soil moisture content for the month of October, soil moisture is steadily increasing year over year during

harvesting season, which may correlate with hurricane season that often brings with it extreme precipitation events. For example, in 1997, the average soil moisture content level across the contiguous United States during harvest season was 362.1 millimeters, and by 2021, levels during the month of October increased to an average of 377.7 millimeters. In 2021, the State of Massachusetts had the highest soil moisture content level during harvest season at 581.3 millimeters and the State of Nevada had the lowest at 66.2 millimeters.

Figure 1b. Average Soil Moisture during the Month of October



Model one's independent variable is the annual cost of food and is calculated using the BEA CPE Index by State for all food and beverage expenditures purchased for "off-premises" consumption, along with food produced and consumed on farms. The annual dollar amount in millions of current dollars at the state level is organized by year for the years 1997 to 2021, adjusted for inflation using CPI, and divided by the corresponding state population based on data from FRED, to generate an average cost of food. Excluded from the independent variable is any money spent by consumers on food for consumption outside of the home, such as at restaurants,

bars, diners, fairs, airports, or any location where food or beverage was purchased to be consumed at the location where it was purchased.

Figure 1c shows the state-level difference for annual food expenditures purchased or produced to consume at home, measured in millions of dollars, for the years 1997 through 2021. Overall, the average cost of food increased significantly over the twenty-five year period, from an average rate of $4.2 million per 1000 people in 1997 to $17 million in 2021. The States of Maine, Vermont, New Hampshire, Massachusetts, and Colorado had the highest rates of food costs over the twenty-five year period with the highest costs across all states occurring in 2021, followed by 2008 and 2011, which all correlate with national economic recession. In 2009, the cost of food sharply decreased across all states before increasing again during the year 2010.

Figure 1c. Annual Cost of Food

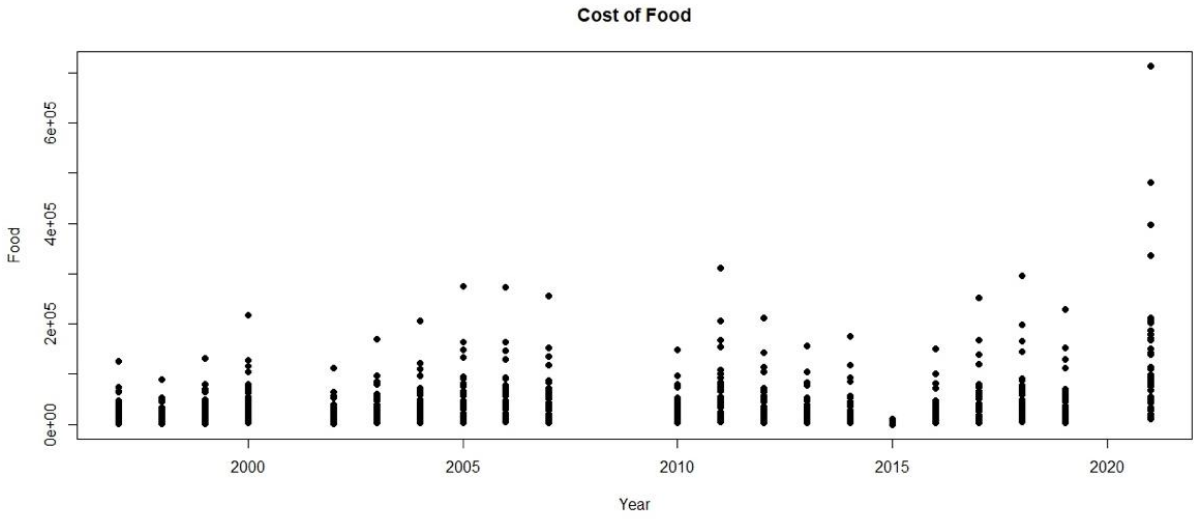
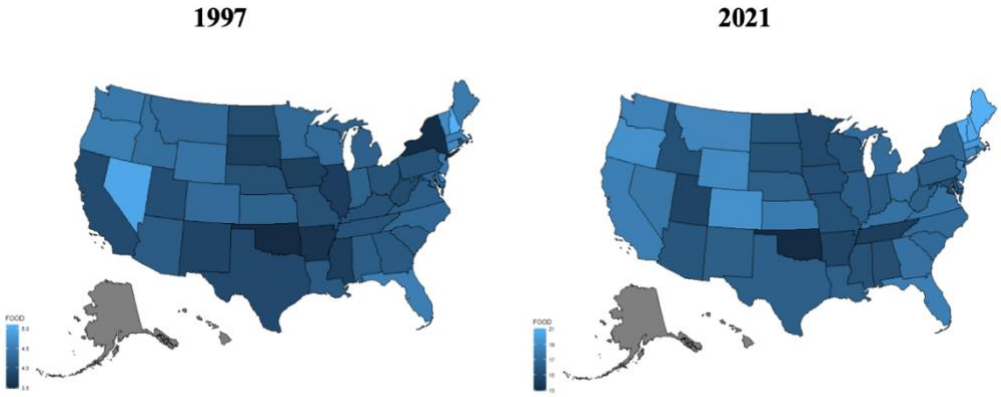


Figure 1d shows the state-level difference for annual food expenditures purchased or produced to consume at home for the year 1997 versus 2021. The lighter the color of blue, the higher the dollar amount. The darkest color of blue indicates a lower cost of food. Overall, the cost of food has dramatically increased over the last twenty-five years with states in the Northwest, Southwest, and Northeast showing the biggest increases, although variance has

stayed fairly steady. Notably, based on state-level differences, the rate of food costs has increased in Nevada, Montana, Wyoming, Colorado, Maine, and Vermont. When compared to other states, the rate of food costs in Oklahoma, Nevada, California, and Idaho has decreased. In 2021, the top ten states with the highest cost of food were Maine, Vermont, New Hampshire, Massachusetts, Colorado, Oregon, Wyoming, Connecticut, Montana, and Washington, with an average annual cost of $19,564 per capita. In 2021, the States of Oklahoma, Tennessee, Utah, and Arkansas had the lowest cost of groceries with an average annual cost of $14,109 per capita.

Figure 1d. Annual Food Expenditures in 1997 versus 2021



My second hypothesis considers how a second component of climate change, measured by extreme weather events, impacts a second component of reproductive justice, defined as the cost of housing. In model two, I explore the link between extreme climate events and increased housing costs. As evidenced by the literature, climate disasters are linked to increased housing costs through a decrease in housing supply following an extreme weather event caused by property damage and an increase in housing demand due to displacement from the loss of homes and the erosion of social safety nets for families. Table 2 summarizes model two's hypothesis and variables.

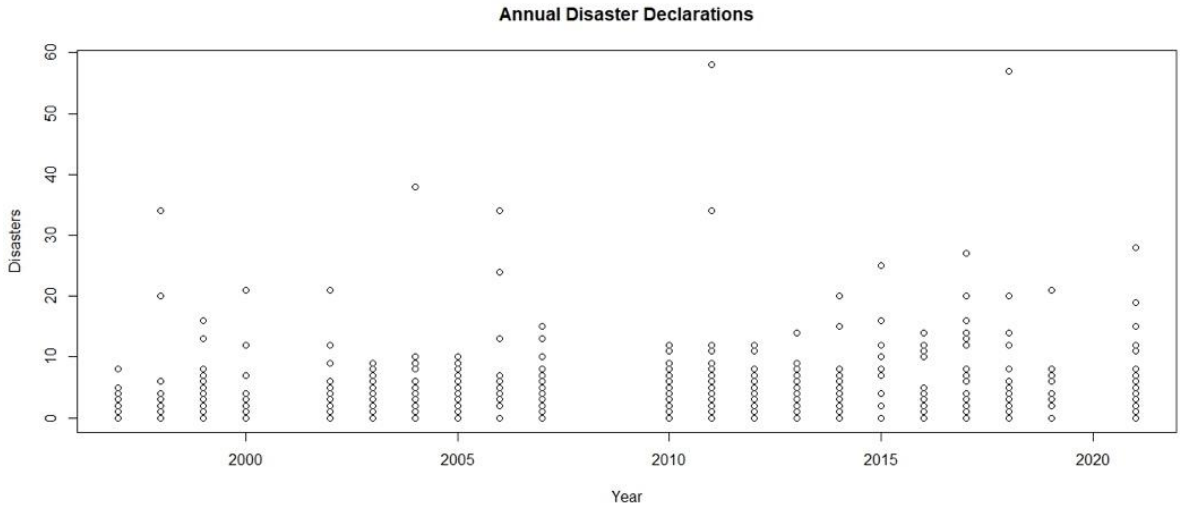
Table 2. Model 2 Hypothesis and Data

Hypothesis 2	Independent variable	Dependent variable	Controls
H2: As occurrence of extreme weather events increase, the cost of housing will increase.	**IV2:** Annual disaster declarations approved for federal assistance	**DV2:** Average annual housing and utilities expenditures	Economic recession
Variable description	Annual number of FEMA disaster declarations at the state level approved for public and/or individual assistance programs	Annual cost of housing, or the average cost of housing and utilities expenditures at the state level, defined as those monetary rents paid by tenants for tenant-occupied housing, the rental value of farm dwellings, and spending on group housing, combined with the cost of utilities, consisting of water, electricity, and gas, divided by the population	Number of quarters spent in economic recession at the national level for each calendar year on a scale of 0 to 4

To calculate model two's independent variables, data is pulled from the Federal Emergency Management Agency (FEMA) Disaster Declarations index, which, based on the Robert T. Stafford Disaster Relief and Emergency Assistance Act, grants the President of the United States authority to approve federal assistance for United States residents impacted by a disaster. The independent variable for model two only includes disaster declarations approved for Public Assistance, which provides federal funding to state and local governments and nonprofit organizations for the cost of disaster-related debris removal, emergency protective measures, and permanent repair work to damaged or destroyed infrastructure; or Individual Assistance, which provides financial and direct services to eligible individuals and households affected by a disaster, organized at the state level by year for the years 1997 to 2021.

Figure 2a shows the state-level difference for annual FEMA disaster declarations approved for federal assistance for the years 1997 through 2021, totaling 3170 FEMA disasters. In 1997, the total number of disaster declarations was 73. In 2021, the number jumped to 217 declarations. However, only a handful of states experienced 20 or more disasters a year, with over half reaching that number within the last decade. Outliers include Texas, California, Oregon, Oklahoma, Washington, Florida, and Colorado. Texas has the most declarations with 58 in 2011. California reached 57 disasters in 2018 and 2020. Oregon experienced 39 in 2020. The median at the state level over the last twenty-five years is two disaster declarations each year.

Figure 2a. Annual FEMA Disaster Declarations



Model two's dependent variable is the average amount of money spent on both housing and utilities each year at the state level and is calculated using the BEA CPE Index by State. Housing expenditures include the total amount of monetary rents paid by tenants for tenant-occupied housing, the rental value for owner-occupied dwellings measured as the income the homeowner could have received if the house had been rented to a tenant, the rental value of farm dwellings, and spending on group housing. Household utilities consist of water, sanitation, electricity, and gas. The annual dollar amount in millions of current dollars at the state level is

organized by year for the years 1997 to 2021, adjusted for inflation using CPI, and divided by the corresponding state population based on data from FRED to generate an average cost of housing.

Figure 2b shows the state-level difference for annual housing and utilities expenditures measured in millions of dollars, for the years 1997 through 2021. Outliers include Colorado, California, Oregon, Washington, Massachusetts, Nevada, and Arizona. The year 2021 saw the highest housing costs, followed by 2008, with the cost of housing being highest over the twenty-five period in Colorado, Massachusetts, California, Washington, New Jersey, and Florida, with an average annual cost of $46,915 per capita, or a monthly housing payment of $3910. Ironically, housing costs plummeted to the lowest levels over the same period in 2009 in some of the same states that also showed the highest rates of housing costs, namely New Jersey, Florida, and Massachusetts, showing how quickly and sharply the housing market can fluctuate based on impacts to supply and demand. The States of Connecticut and Vermont also showed significantly lower housing costs during the year 2009.

Figure 2b. Annual Cost of Housing

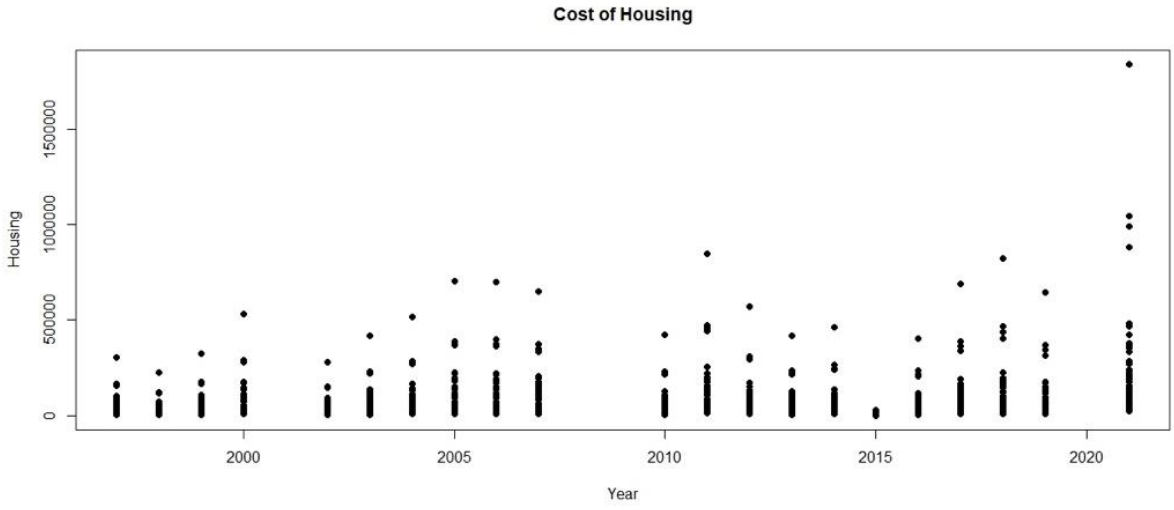
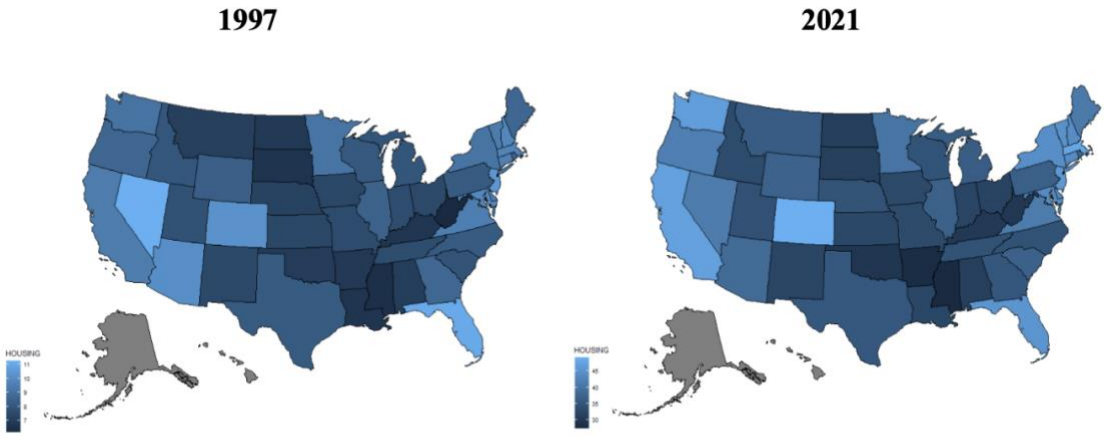


Figure 2c shows the state-level difference for annual housing expenditures for the year 1997 versus 2021. The lighter the color of blue, the higher the dollar amount. The darkest color of blue indicates a lower cost of housing. Similar to food costs, the cost of housing has dramatically increased over the last twenty-five years with states in the Northwest, Southwest, and Northeast showing the biggest increases. However, variance across housing costs at the state level has significantly increased from 1.62 in 1997 to 34 in 2021. Based on state-level differences and the rate of change across the contiguous United States, the rate of housing costs decreased in Nevada, Arizona, and Florida and increased in Montana, Colorado, California, and Massachusetts over the twenty-five year period.

Figure 2c. Annual Housing Expenditures in 1997 versus 2021



My third hypothesis considers how a third component of climate change, measured by surface temperatures, impacts a third component of reproductive justice, defined as the cost of health care. In the third model, I examine the relationship between hotter surface temperatures and increased health care expenditures, defined as consumer spending on outpatient services, including physician, dental, and paramedic services, and inpatient services, including hospital and nursing home services. Based on the literature, as temperatures increase, not only are

humans more likely to suffer from heat stress, heat stroke, and other heat-related illnesses, but vectors, such as mosquitos and ticks, are able to live longer and travel to more regions populated by humans, which increases the likelihood of vector-borne disease being transmitted to humans. Table 3 summarizes model three's hypothesis and variables.

Table 3. Model 3 Hypothesis Data

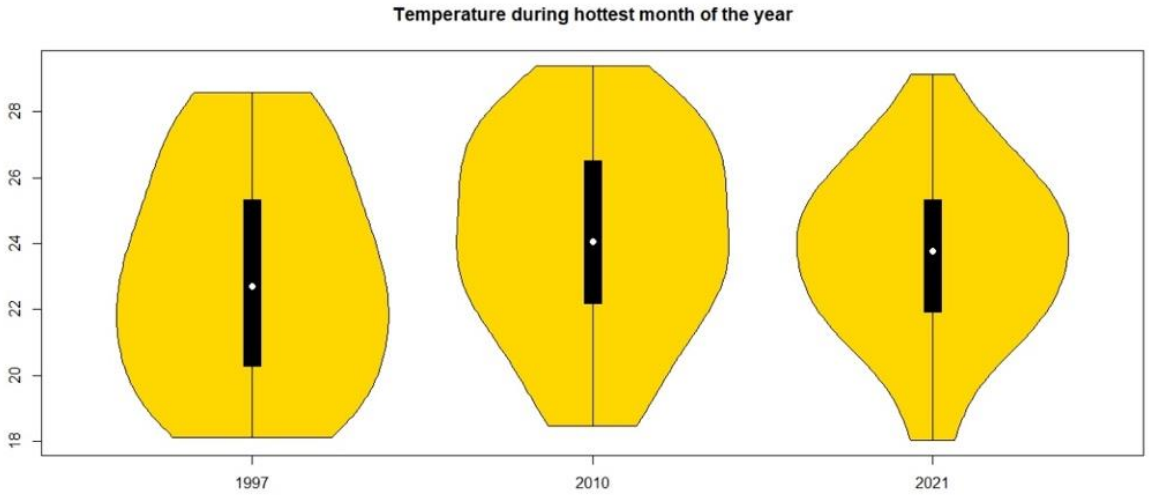
Hypothesis 3	Independent variable	Dependent variable	Controls
H3: As surface temperatures increase, the cost of health care will increase.	**IV3:** Average monthly temperature during hottest month of the year	**DV3:** Average annual health care expenditures	Economic recession
Variable description	Annual average temperatures at the state level during the month of July	Annual cost of health care, or the average cost of health care expenditures at the state level, defined as outpatient services, consisting of physician, dental, and paramedical, hospital services, and nursing home services, divided by the population	Number of quarters spent in economic recession at the national level for each calendar year on a scale of 0 to 4

In the third model, the independent variable is the average monthly temperature during the month of July, most often associated with the hottest month of year for the contiguous United States, and is based on data from NOAA's Climate Normals datasets, which compare typical climate conditions against a uniform thirty-year period. The variable is calculated using NOAA's 344 surface monitoring sites and by averaging the daily surface temperature measurements for the month of July of all surface monitoring sites located within a state to produce an annual July surface temperature measurement for each state across the contiguous United States The end

result is the average surface temperature during the month of July organized at the state level by year for the years 1997 to 2021.

Figure 3a shows the state-level difference for the average surface temperature during the month of July, measured in degrees Celsius, for the years 1997, 2010, and 2021. Overall, temperatures are steadily increasingly. In 1997, the average temperature in July was 22.9 degrees Celsius. By 2021, the average temperature rose to 23.7 degrees Celsius, an average increase of 0.08 degrees Celsius across the states, with variance decreasing from 18.32 in 1997 to 6.4 in 2021. The highest July temperature during fifteen of the last twenty-five years occurred in three states – Oklahoma, Arizona, and Texas – and the lowest occurred in seven states - New Hampshire, Washington, Maine, Michigan, Oregon, Vermont, and Wisconsin.

Figure 3a. Average Monthly Temperature during the Month of July



Model three's dependent variable is based on data from the BEA CPE Index by State on annual health care expenditures, which is calculated based on the amount of money consumers spent on health care needs, including insurance premiums, deductibles, copayments, coinsurance, and out-of-pocket expenses. The dependent variable is comprised of health care costs in three

categories: (1) outpatient services, consisting of physician, dental, and paramedical, (2) hospital services, and (3) nursing home services. The annual dollar amount in millions of current dollars at the state level is organized by year for the years 1997 to 2021, adjusted for inflation using CPI, and divided by the corresponding state population based on data from FRED to generate an average cost of health care.

Figure 3b shows the state-level difference for annual health care expenditures, measured in millions of dollars, for the years 1997 through 2021. Outliers include the States of South Dakota, North Dakota, and Massachusetts where the annual cost of health care in 2021 was $53,962, $46,570, and $46,370 per capita respectively. In contrast, for the same period, the cost of health care in the State of Mississippi was $27,345 per capita. Interestingly, in 1997, the annual cost of health care in South Dakota was $6,601 per capita and $6,024 in Mississippi.

Figure 3b. Annual Cost of Health Care

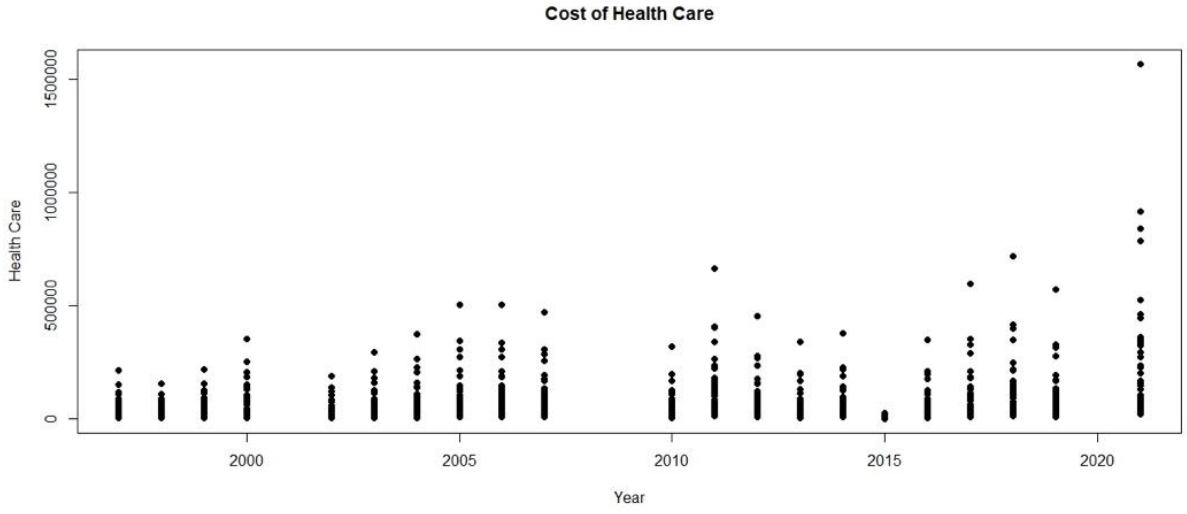
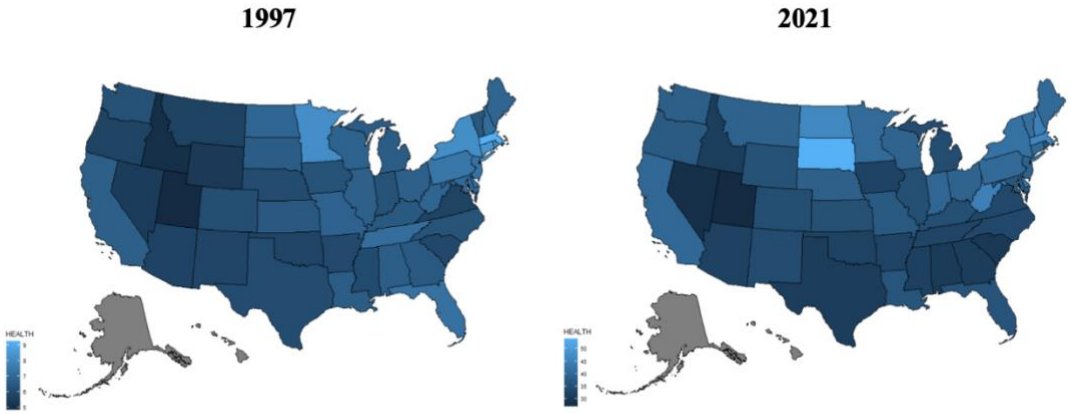


Figure 3c shows the state-level difference for annual health care expenditures for the year 1997 versus 2021. The lighter the color of blue, the higher the cost of health care. The darkest color of blue indicates a lower cost of health care. Similar to food and housing costs, the overall cost of health care has dramatically increased over the last twenty-five years with states in the

Midwest showing the biggest increase. The year 2021 showed the biggest increase with the cost of health care being highest in the State of South Dakota and lowest in Mississippi. Variance across the states has also sharply increased from 0.77 in 1997 to 26.94 in 2021. When compared to state-level differences and rate increases in other states, the rate of health care costs has decreased in several western and southern states, including Idaho, Wyoming, Oregon, Texas, Alabama, Georgia, and South Carolina.

Figure 3c. Annual Health Care Expenditures in 1997 versus 2021



Finally, my fourth hypothesis considers how three components within the cost of raising a child, measured by food, housing, and health care expenditures, impact one component of full bodily autonomy, measured by birth rates. Leveraging the results of the first three models, in model four I employ the weighted average of the dependent variables, which represent food, housing, and health care expenditures, to explore the link between cost of living and birth rates, measured by the total number of births organized by year and state and controlling for fertility based on state-level fertility rates from the National Center for Health Statistics (NCHS), part of the Center for Disease Control and Prevention (CDCP), which tracks the percentage of females aged fifteen to forty-four in the current population. Based on the literature, increased costs of

raising a child can result in restricting the ability to freely choose to have a child, and, ultimately, increased barriers to full bodily autonomy represented by declining birth rates. Table 4 summarizes model four's hypothesis and variables.

Table 4. Model 4 Hypothesis and Data

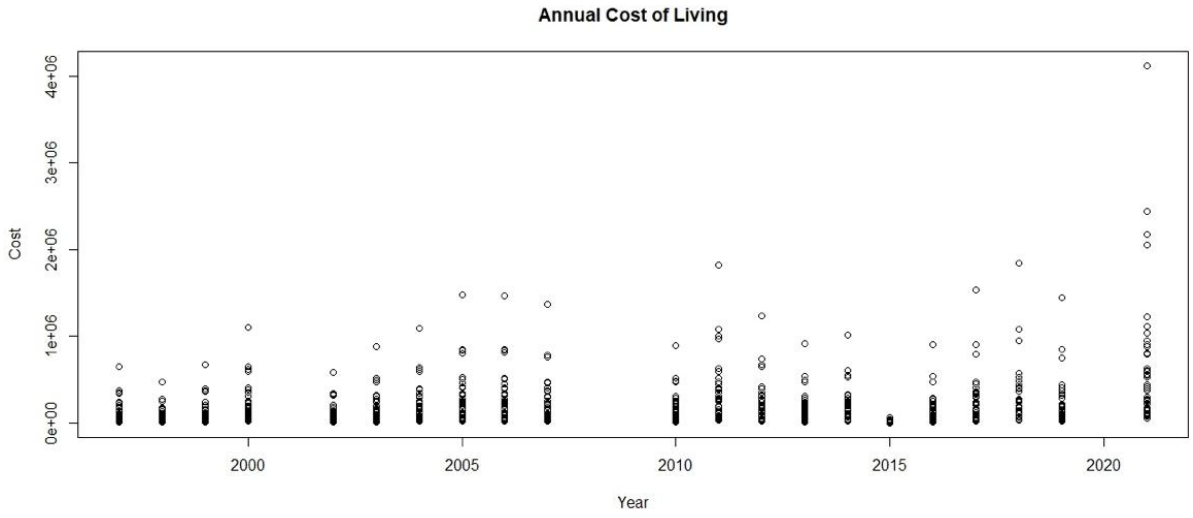
Hypothesis 4	Independent variable	Dependent variable	Controls
H4: As the cost of raising a child increases, the number of children born will decrease.	**IV4:** Average annual cost of living	**DV4:** Annual number of births	1. Economic recession 2. Fertility rate
Variable description	Annual cost of living, or the average cost of food, housing, and health care expenditures at the state level, divided by the population	Annual number of births at the state level, divided by the population	1. Number of quarters spent in economic recession at the national level for each calendar year on a scale of 0 to 4 2. Percentage of females aged fifteen to forty-four in the population at the state level

The independent variable for model four is the annual dollar amount of food, housing, and health care expenditures as defined and calculated by models one, two, and three using the BEA CPE Index by State, measured in millions of current dollars at the state level, organized by year for the years 1997 to 2021, adjusted for inflation using CPI, and divided by the corresponding state population based on data from FRED to generate an average cost of living.

Figure 4a shows the state-level difference for annual cost of living, measured in millions of dollars, for the years 1997 through 2021. Across the board, the cost of living has significantly increased for all states within the contiguous United States over the last twenty-five years, with variance across the states increasing from 3.72 in 1997 to 99.2 in 2021. The largest increase in

the cost of living occurred in 2021 across the majority of the contiguous United States, with living costs being highest in the States of Massachusetts, New Hampshire, Vermont, California, New York, Connecticut, Washington, Delaware, and Colorado at an average of $105,780 per capita. In contrast, the States of Alabama, Utah, Arkansas, Oklahoma, and Mississippi had the lowest cost of living at an average of $75,570 per capita.

Figure 4a. Annual Cost of Living



In model four, the dependent variable is the annual number of births for each state, calculated based on data from the CDCP, organized by year for the years 1997 to 2021, and divided by the corresponding state population based on data from FRED to generate a state-level birth rate. The model controls for the fertility rate, based on the percentage of females aged fifteen to forty-four in the population at the state level per the Fertility Rates by State dataset from the CDCP, and is organized by year for the years 1997 to 2021.

Figure 4b shows the state-level difference of the annual number of births for the years 1997, 2010, and 2021. Overall, the annual number of births continues to be highest in Utah, Texas, and Arizona and lowest in Vermont, Maine, and New Hampshire. In 2021, the State of

Utah had the highest birth rate at approximately 14 births for every 1000 residents, with Vermont having the lowest birth rate at approximately 8.3 births for every 1000 residents. Overall, birth rates remained fairly steady up through the beginning of the twenty-first century, when the annual number of births began to steadily decline across all states throughout the contiguous United States

Figure 4b. Annual Number of Births

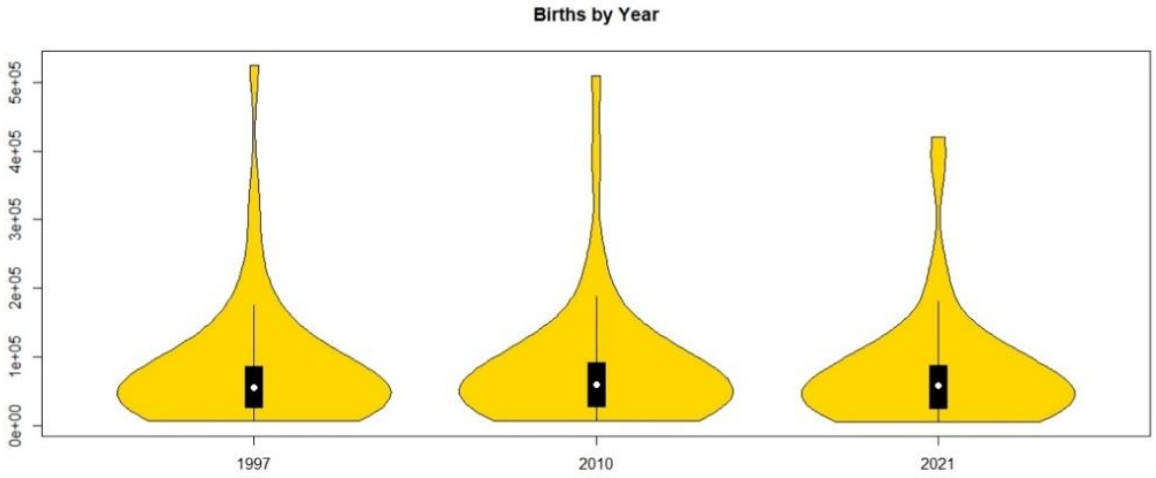
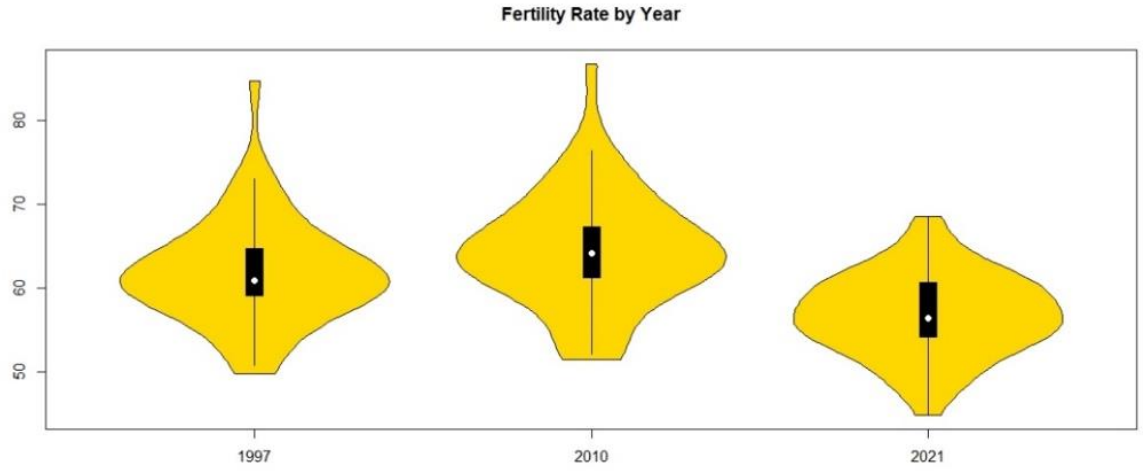


Figure 4c shows the state-level difference for annual fertility rate defined as the percentage of females aged fifteen to forty-four in the population during the years 1997, 2010, and 2021. Utah has the highest fertility rate of all the states in the contiguous United States with its fertility rate during fifteen of the last twenty-five years being higher than any fertility rate in any year for any other state. The States of Arizona, Idaho, and South Dakota had the next highest rates of fertility, with the States of Vermont, Massachusetts, New Hampshire, Oregon, and Rhode Island showing the lowest fertility rates. Overall, the rate of fertility steadily increased from 1997 to 2010 before declining between the years 2010 and 2021. However, variance across

the states has remained about the same with fluctuations in the annual number of births and fertility rates cutting across demographics throughout the contiguous United States

Figure 4c. Annual Fertility Rate



Linking the Fulfillment of Fertility Desires to Prosperity

Understanding how climate change impacts the fulfillment of fertility desires helps to understand the impacts of climate change on the realization of prosperity for families, communities, and economies. Accordingly, the potential for interaction between population growth and economic growth has been on the agenda of economists for some time. For example, in 1939, Alvin Hansen argued that low birth rates of the Great Depression created less incentive for economic investment, which resulted in decades of slow economic growth. Hansen's research built upon Adam Smith's theory that population growth increases productivity due to a larger population providing more opportunities for labor. However, decades after their theories were published, the onset of climate change and its associated impacts to financial stability, along with an increased collective awareness of the positive link between industrial activity and global warming, appear to have an opposite impact on population growth. Hansen and Smith developed

their hypotheses based on their understanding of economic and human activity without experiencing or understanding the consequences of a warming planet. Unfortunately, the reality of climate change can no longer be ignored in economic policy. Climate change creates additional barriers to full bodily autonomy through increased costs of parenting caused by economic instability, which prevents families from fulfilling their fertility desires and society from realizing prosperity.

However, to understand the relationship between climate change, the fulfillment of fertility desires, and prosperity, we must first understand how and why climate change impacts fertility desires and the pathway through which it does. Further, to understand the relationship between climate conditions and fertility, we need to explore the drivers of and barriers to fertility behavior. As discussed throughout chapter three, the cost of raising a child is a motivator for family planning decisions. While an individual may desire to have multiple children, the inability to afford the cost of housing, food, and health care, among many other expenses connected to rearing a child, may prevent the individual from fulfilling her fertility desires, often a strong measure of societal prosperity throughout the literature. For example, if classical economic theory holds that economic progress positively correlates with increased birth rates, can we assume that progress declines along with declining birth rates? Further, if increased costs of living are driving a decline in birth rates, can we conclude that the root cause of rising prices is responsible for diminished prosperity? To explore how we get from the impacts of climate change to fully realizing prosperity, we must first understand how climate change impacts the cost of living.

Chapter 3, Section III: Rethinking Prosperity in the Age of Climate Change

Table 5 summarizes the results from a series of fixed effects regression models. Model one presents the effects of average soil moisture content levels on annual food expenditures, controlling for economic recession, and finds the average soil moisture content level during the month of April, known most commonly as planting season, is significant. However, the second part of model one finds soil moisture content levels during the month of October, known most commonly as harvest season, is only marginally significant. The primary variables in models two, three, and four are all statistically significant, indicating with high confidence that the variables predict the relationships between disaster declarations and housing costs, surface temperatures and health care costs, and the cost of living and annual number of births.

Table 5. Results from Fixed Effect Linear Regression Predicting Measures of Prosperity

	MODEL 1	MODEL 2	MODEL 3	MODEL 4
Independent Variable(s)	*1a. Average soil moisture content level during the month of April* *1b. Soil moisture level during the month of October*	*Annual number of disasters declarations approved for federal assistance*	*Annual surface temperatures during the month of July*	*Annual number of births divided by state population*
Dependent Variable	*Annual food expenditures divided by state population*	*Annual housing expenditures divided by state population*	*Annual health care expenditures divided by state population*	*Annual food, housing, and health care expenditures divided by state population*
Coefficient	*1a. -0.0054625* *1b. 0.0041728*	*0.164681*	*1.109448*	*-0.0083176*
Control Variables	*Recession rate is not statistically significant*	*Recession rate is not statistically significant*	*Recession rate is not statistically significant*	*The state-level fertility rate with an estimate of 0.2, standard error of 0.005, and t-value of 47.5. is statistically significant at the 0% confidence level*
Error Term	*1a. 0.0023989* *1b. 0.0021514*	*0.049338*	*0.186737*	*0.0011229*
T-value	*1a. -2.2770* *1b. 1.9396*	*3.3387*	*5.9412*	*-7.4075*
P-value	*1a. 0.02297*	*0.0008715*	*3.745e-09*	*2.486e-13*

	1b. 0.05268			
Significance	*1a. 0.01*	*0.0*	*0.0*	*0.0*
	1b. 0.05			

In model one, for every millimeter the soil moisture content level decreases during the month of April, often associated with planting season and the end of the wet season, the cost of food increases by approximately $5 per capita. However, the second part of model one, or the relationship between the level of soil moisture content during harvest season and food expenditures, is found to be only marginally significant. So, while for every millimeter the soil moisture content level increases during the month of October, often associated with harvesting season and the end of dry season, the cost of food is expected to increase by approximately $4 per capita, the extent of and reasons behind the relationship between soil moisture content during the month of October and food expenditures is less clear based on the modeling, data, and variables used in this study.

While an increase of $5 or $4 annually per person may seem trivial, overall, food is getting more expensive. The USDA reports that the cost of groceries has increased around 1.2 percent each year over the last thirty years, but went up nearly twenty percent in 2022 compared to 2021. In addition, the same agency found the cost of groceries was about five percent higher in 2023 than in 2022, with the twenty-year historical level of retail food price inflation around only 2.5 percent. From 2019 to 2023, the amount of money consumers in the United States spent on food rose by twenty-five percent compared to a 19.2 percent increase for all other items tracked by the BEA's CPE. Further, while the average decrease in soil moisture during planting season is less than fifty millimeters from 1997 to 2021, not all soil across the contiguous United States is created equal. For example, several states where staple crops are grown saw sharp decreases in soil moisture over just a one-year period, such as California which decreased 84

millimeters from 2020 to 2021, equating to an annual increase of $2100 in the cost of food for a family of five. In addition, during the same year, North Dakota decreased 122 millimeters and South Dakota decreased about 100, which adds approximately $3050 and $2500 respectively to the annual cost of groceries for a family of five living in one of these states due to soil moisture content decreases during the month of April alone.

The results of this study highlight what every farmer already knows - when soil is too dry to plant due to the gradual decrease in soil moisture year over year, or too wet to harvest due to extreme weather events that often accompany harvest in the Fall, agriculture yields are likely to decrease, which triggers a chain reaction from high commodity prices to higher prices at the grocery store. Further, the adverse impacts to healthy soil from a changing climate do not appear to be subsiding, but may actually be getting worse. NASA reports that between 2000 to 2020, global soil moisture content levels, measured throughout all twelve months of each year, decreased at a rate of 1284 kilograms per millimeter annually and is expected to continue on the same trajectory. Based on these findings, if soil moisture levels are expected to decrease globally by 1284 kilograms per millimeter each year, and if for each millimeter that soil moisture decreases during planting season across the United States consumers are expected to spend an additional $5 per capita on the cost of groceries, then consumers could see significant increases of food expenditures each year from soil moisture decreases alone. However, what is less understood is how unchecked corporate expansion is contributing to decreases in soil moisture content levels.

In model two, the number of federal disaster declarations positively correlate with the amount of money consumers spend on housing and utilities each year. Specifically, for each additional disaster declaration approved for public or individual assistance by FEMA, the cost of

housing and utilities will increase $165 per capita per year. While $165 spread across twelve months may not seem like a significant increase in housing and utilities costs, a household of five could see an increase of $825 a year for each additional disaster declaration, or an increase of $68.75 per month. Further, the State of California experienced 57 disasters in 2018 and 2020, which is an increase of 30 from the twenty-seven disasters experienced in 2017 and an increase of 36 from the twenty-one disasters experienced in 2019. Based on these findings, a family of five living in California could be faced with an increase in their housing costs of $24,750 in 2018 and $29,700 in 2019.

Climate disasters have increased significantly over the past few decades with the likelihood that disaster declarations will continue to increase year over year. According to FEMA, each year since 2019, consumers living in the United States are experiencing more than 200 disasters with twenty of those disasters costing more than a billion dollars each, which is a sharp increase from the average of three such disasters seen during the 1980s. Further, with 2023 seeing a record twenty-three climate disasters costing more than a billion dollars each, the climate-fueled destruction of homes and resulting decrease in housing supply and increase in housing demand is expected to only get worse. Yet, what is less clear is whether and how spikes in housing costs that positively correlate with extreme climate events can actually be traced back to the protection of shareholder interests by outdated corporate governance models.

In the third model, the level of surface temperatures during the month of July, often associated with the hottest month in the United States, positively correlates with the amount of money consumers spend on health care during the same year. Specifically, for each degree Celsius that the average temperature during the month of July increases, the cost of health care increases by approximately $1,110 per person per year. According to NASA, 2023 was the

hottest year on record with temperatures 1.4 degrees hotter than in 1880, when humans first started measuring and tracking surface temperatures, and surface temperatures are expected to continue to rise. NASA reports that global surface temperatures have increased about 0.08 degrees Celsius each decade since 1880 and are expected to continue on this pathway.

As previously discussed, increased summer temperatures are associated with heat-related illnesses and the month of July tends to have the highest temperatures of the year throughout the contiguous United States, along with children being out of school and spending more time outside, making them more suspectable to the adverse effects of high temperatures. As a result, a family of five could see an increase each decade in annual health care expenditures of approximately $444 per year, resulting in an almost $100 increase in health care costs each month by the end of the next twenty-five year period based on increased surface temperatures alone. An increase of this amount to health care expenditures, when also considering other cost of living increases, such as food and housing costs, could be crippling to middle and lower-income household budgets. However, our understanding of what is driving the changing climate that is behind the uptick in heat-related illness remains less clear.

In model four, the combined expenditures for food, housing, and health care – referred to as the cost of living – have an inverse relationship with birth rates at the state level. Specifically, for each average increase of one unit of the cost of living, measured by consumer expenditures in millions of dollars divided by population in thousands of people, the average number of births each year decreases by 0.83 per 100,000 people. Controlling for the rate of fertility, based on the percentage of females aged fifteen to forty-four in the population, birth rates and fertility rates are closely related. However, as the cost of living increases and fertility rates go up, birth rates are still expected to decline. Specifically, for each average increase in the cost of living that is

associated with a 0.83 decrease in the number of births per 100,000 people, there are approximately 22.8 more females aged fifteen to forty-four per 100,000 people in the population. Importantly, the decline in birth rates cannot be explained by changes in the fertility rate alone. Yet, these findings may help to explain current research regarding dropping birth rates.

For example, a common metric for tracking birth and fertility rates is the replacement rate, or the number of births needed to maintain current population levels. In 2024, economist Jesus Fernández-Villaverde found, for the first time in history, the global fertility fell below the replacement rate of 2.2 to slightly above 2.1 during the year 2023. The drop is surprising to most, partly because the drop includes women who differ by race, ethnicity, age, income, labor participation, and level of education, but especially since national birth rates are reporting around ten to twenty percent below estimates from the United Nations (Ip & Adamy 2024). However, what is more puzzling is that no one can quite figure out what is driving the decline in birth rates.

In 2021, a group of researchers set out to explore the reasons behind the declining birth rate by analyzing several state-level differences, such as abortion, employment, health care, childcare, and debt, but were unable to identify any economic, political, or social factor, other than the Great Recession of 2008, to explain the drop in births between the years 2007 to 2020 (Kearney et al 2021). Interestingly, the only factor the researchers were able to identify was an economic factor, such as the cost of living, to explain the decline in birth rates for a few years, represented by a national economic recession. Researchers concluded that "shifting priorities," such as changes in fertility preferences, professional or personal aspirations, or parenting norms, may be to blame for the declining birth rate. Yet, the presence of environmental factors, such as climate anxiety or rising costs of living due to extreme weather events and higher temperatures, were not considered.

In fact, few studies explore or address how climate change positively correlates with an increased cost of living and, as a result, may influence the family planning decisions of individuals or couples, particularly decisions to have less children or no children simply because they cannot afford to feed, house, or care for an additional household member. Yet, how would family planning decisions change with increased knowledge that a family of five faces an increase in monthly expenditures of approximately $5000 due to increased food, housing, and health care costs? Further, would family planning decisions be impacted even more with the understanding that increased monthly expenditures drop to $4000 for a family of four? Or, $3000 for a family of three? What if every person entering into adulthood and every couple embarking on the journey towards parenthood knew that increased monthly expenditures dropped to $2000 a month for a family of two and to $1000 for a family of one? How would an increased understanding of the relationship between our changing climate and the cost of living impact decisions around whether or not to have a child, along with how many children a household has the capacity to raise in a healthy environment?

A Case for Sustainable Prosperity

When increased costs of food, housing, and health care, driven by climate conditions, have an inverse relationship with birth rates, it can be inferred that climate change creates additional barriers to bodily autonomy. While we have already made the connection between climate change and environmental degradation, the results of each regression illustrate the significant impact a changing climate has on economic and societal conditions, including the limited ability for individuals to fulfill their fertility desires due to increased costs associated with raising children. If rising prices prevent an individual (or couple) from freely choosing to

have a child, then that individual does not have full bodily autonomy. Therefore, if climate change contributes to rising costs of living, which infringes on the ability to freely choose whether to have a child, climate change also infringes on the realization of reproductive justice.

The results of this study contribute to a growing body of evidence showing that climate change contributes to and adds complexities within societal problems. While climate change does not create food, housing, or health care insecurity, it may be contributing to it, along with strengthening vulnerabilities, adding challenges to remediation, and deepening ongoing crises. As such, climate change adds to the environmental and social issues that compound to create larger, more complex adverse impacts for communities at the intersection of climate change and social justice, particularly new and additional barriers to accessible health care, food security, and affordable housing, while also exacerbating vulnerabilities already present within our communities, further impeding and deteriorating individual bodily autonomy and the sustainability of healthy communities and vibrant economies. Therefore, climate change is detrimental to societal prosperity and in order to sustain healthy, vibrant societies, we must address and reverse our changing climate.

At the root of human-caused climate change are greenhouse gas emissions that are fueling global warming, resulting in unpredictable rain patterns, higher temperatures, and more extreme weather events, such as hurricanes and wildfires. At the core of greenhouse gas emissions is consumerism, corporate expansion, and extractive capitalism. In the modern capitalist model, consumer demand drives corporate expansion which, in turn, drives greenhouse gases, climate change, and the resulting adverse impacts to food, housing, and health care expenditures. Yet, modern success models do not acknowledge that earning more money and buying more stuff may actually be contributing to the rising cost of living and the declining birth

rate. Further, if corporate expansion is driving the depletion of natural resources and contributing to the climate crisis, which, as a result, is driving up the cost of living and making it harder for parents to raise their families, then it can be concluded that the mainstream measurement of economic progress based on limitless market growth is actually at odds with the ability of a society to fully realize prosperity. Unchecked corporate expansion is the largest contributor to global warming, and it can no longer underpin every corporation's year-end ambition.

To protect the ability of families and communities to freely choose whether to have a child and to raise a child in a healthy environment, we must acknowledge and remediate the primary driver of climate change: unchecked corporate expansion disguised as economic progress. We must find a new approach for determining and measuring the success of a company, one that is grounded in sustainable, responsible growth, while also responding to market conditions and the needs of society. In the era of climate change, traditional approaches to economic models fall short. Building upon what we learned through Raworth's Donut Economics and Rockstrom's planetary boundaries, the set of success criteria used by both public and private enterprise requires another look. While Raworth and Rockstrom establish environmental and social considerations and planetary limits, their theories lack a practical and pragmatic approach to corporate strategic planning that considers economic growth alongside environmental and human sustainability based on current market conditions.

The idea that corporate expansion must be restricted simply for the sake of restricting growth is not practical, but neither is advocating for corporate expansion just for the sake of expansion. Therefore, we need a better model for understanding when, why, and how corporate expansion contributes to the overall good of society and when it hinders it. There are many ways to measure success, and not all of them fuel climate change and increase the cost of food,

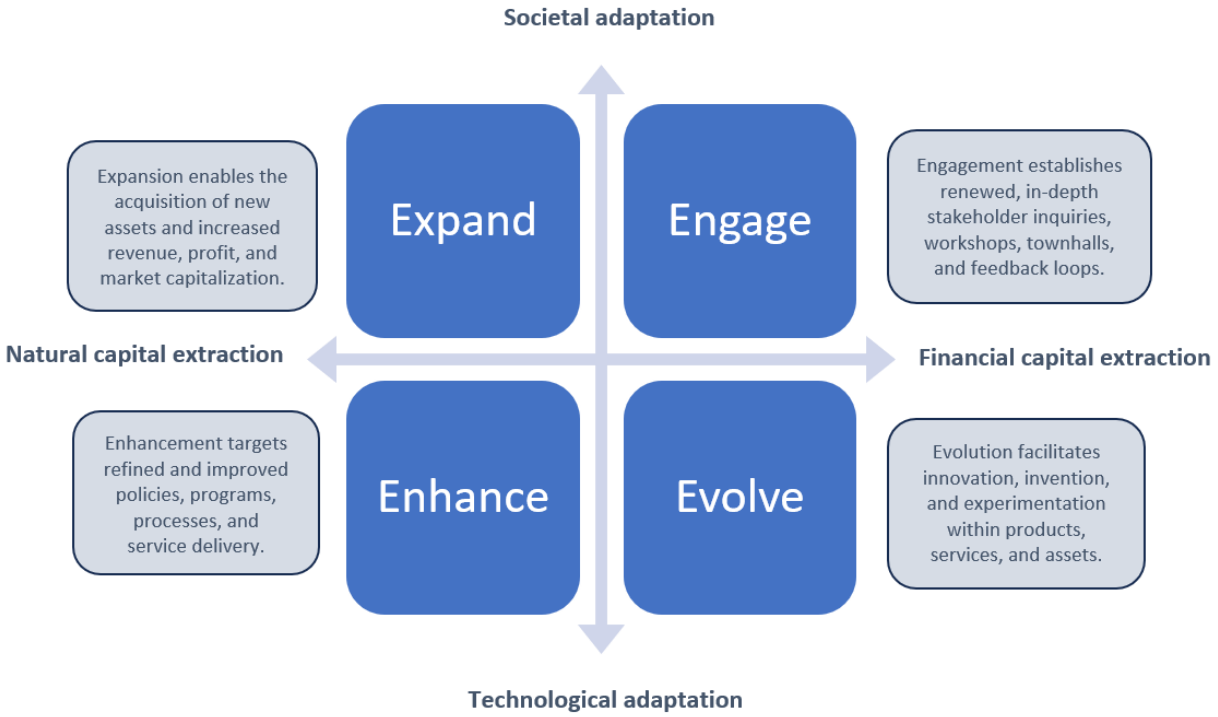
housing, and health care for communities. While there will always be a need for corporate expansion, now is the time to put forth a better method to determine when that need exists, along with the factors required to make the determination. By evolving to a new model to measure the success of a company, we can not only better respond to and meet the needs of markets, but we can also protect the wellbeing of communities and promote the health of the environment, all of which contribute to societal prosperity.

Therefore, I offer a new model of prosperity, building upon the work, research, and teachings of many economists, sociologists, and community leaders and leveraging my own experiences working in Corporate America, community engagement, and environmental sustainability, to measure whether market expansion meets the preconditions needed to promote, enable, and sustain healthy families, communities, and economies with four market approaches – engage, evolve, enhance, and expand - through four market preconditions: (1) meets an immediate societal need economically, (2) considers long-term implications transparently, (3) manages capital inputs and outputs responsibly, and (4) establishes a value chain sustainably. Under a new model of prosperity, corporate expansion will be more responsible and more sustainable, giving way to remediating the climate crisis, controlling the rising cost of living, and increasing the likelihood that individuals and families can fulfill their fertility desires.

Figure 5 illustrates the new prosperity model's four market approaches – engage, evolve, enhance, and expand – and the overall goals and benefits of each. With a new model of prosperity, before a company can plan for market expansion, it must consider the long-term impacts of such growth transparently, which requires the company to first confirm that its expansion in the market is not only economical, but also responsible and sustainable by (1) meeting a societal need economically based on robust stakeholder engagement; (2) evolving its

practices to be rooted in responsible research, design, and innovation, and (3) enhancing and refining its circularity processes to eliminate inefficiencies and unnecessary waste.

Figure 5. Rethinking Market Growth

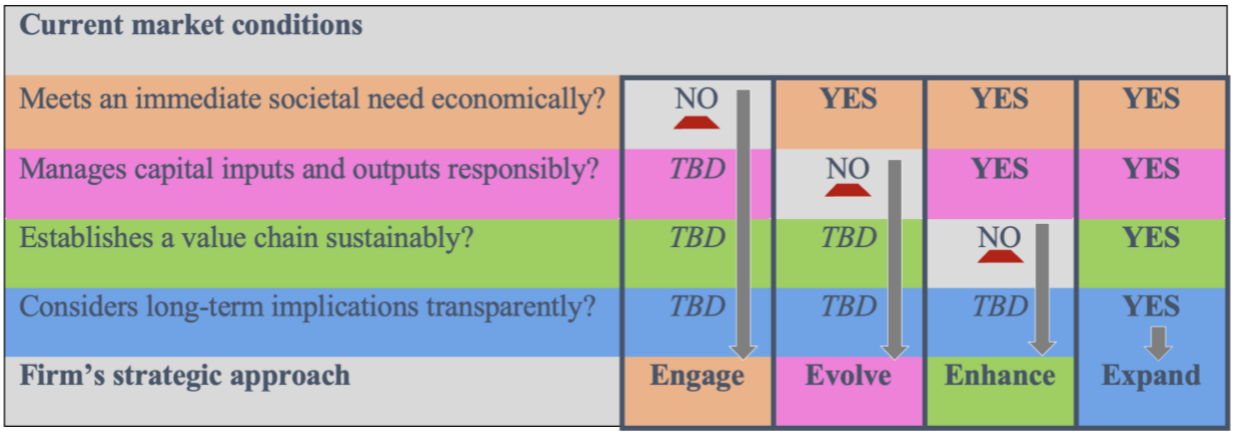


Under the new model, in order for a company to expand, it must show that corporate expansion is meeting a societal need economically, transparently, sustainably, and responsibly. In situations where a company cannot demonstrate all four market conditions exist, the company has a roadmap for pursuing success through other means, which not only allows it to maintain and, at times, even add firm value, but also puts the company on the path towards meeting the market conditions necessary for market growth. Expansion is only one way for a company to demonstrate its value. Stakeholder engagement, research and development, and improved operational efficiency are all examples of success criteria that are often undervalued, overlooked, and misunderstood. A new model of prosperity embraces the principles of sustainability without

sacrificing those of capitalism. As a result, the model evolves extractive capitalism to incorporate the principles of sustainability in a way that is practical, actionable, and measurable.

Table 6 illustrates the four market preconditions required for corporate expansion and the alternative market approaches – engage, evolve, and enhance – for situations when corporate expansion is determined to be irresponsible and/or unsustainable. Each alternative market approach provides a corporation with alternative measures of success while also putting it on the pathway towards achieving the conditions necessary for responsible, sustainable growth.

Table 6. Preconditions for Market Growth



Private Industry Considerations

In January 2024, the World Economic Forum (WEF) released its Global Risks Report, an annual report which explores the most severe risks the world may face over the next decade. The 2024 version assesses risk against a backdrop of rapid technological change, economic uncertainty, a warming planet, and conflict, and calls for a new approach to economic growth that balances efficiency with long-term sustainability and equity, examining speed and quality together (WEF 2024). Similarly, a United Nations report published in February 2024 concludes that he global extraction of raw materials is expected to increase by 60 percent by the year 2060,

building upon findings that natural resource extraction has soared by 400 percent since 1970 due to industrialization, urbanization, and population growth. Further, the report illustrates how the extraction of natural materials is responsible for 60 percent of global heating impacts, 40 percent of air pollution impact, and 90 percent of global water stress (UN 2024). However, what is less addressed is the relationship between private enterprise and natural resource extraction, particularly how corporations' annual strategic growth goals contribute to natural capital depletion.

While the recent economic reports and shocking statistics may seem dire to some, what is more scandalous is that the same publications have been reporting on these risks for years, even decades. The idea that corporate expansion and unchecked market growth is associated with adverse environmental and social impacts is not a recent revelation. In fact, many companies publish annual environmental, social, and governance (ESG) reports that outline their commitment to managing the environmental and social risks associated with their business models, along with their plans to achieve "sustainable growth" within their operations, supply chains, and business relationships. However, few are willing to acknowledge that boundless corporate expansion is not sustainable, but, rather fuels climate change, often resulting in adverse impacts to families, communities, and economies. Based on the planetary boundaries, the continued expansion of industrial activity and economic development cannot be sustained, which restricts the ability for industries and markets to engage in unchecked growth responsibly. Further, by ignoring this restriction, companies contribute to the ongoing oppression of families, communities, and economies. Yet, most would agree that society needs economic development and industrial growth in some form to sustain, evolve, and continue prosperity. However, the

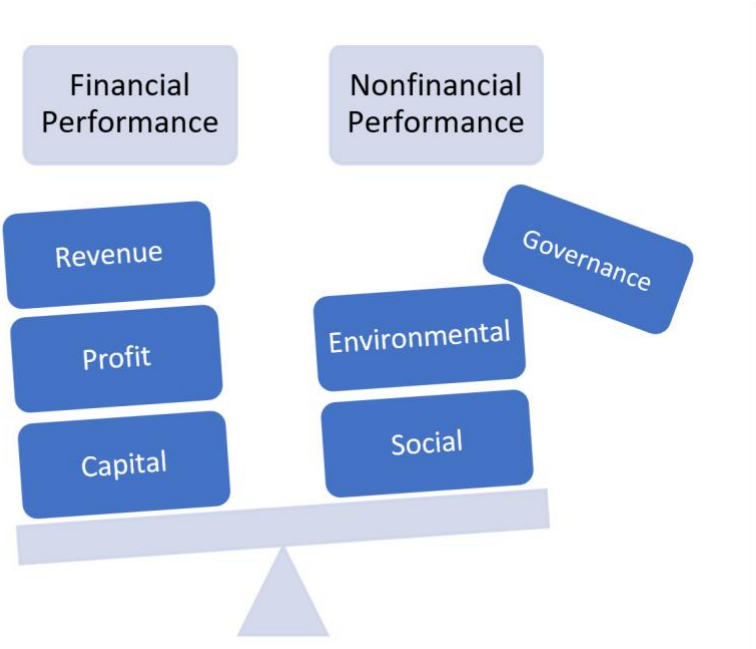
point at which the benefits to societal prosperity derived from corporate expansion and economic development peak has less consensus.

A good starting point for how best to address this challenge may be to understand how companies evaluate success. Today, most companies measure success based on financial performance measured by market growth, or by an increase in financial assets obtained through corporate expansion within an industry. Behind this belief is the shareholder primacy model. First introduced in *Dodge v. Ford Motor Co*., the principle of shareholder primacy has been considered a tenet of the fiduciary duty owed by corporate directors for decades, encouraging short-term profit-seeking behavior with significant social ramifications (Lee 2023). The model prioritizes the protection of shareholder value in all decisions, resulting in corporations being criticized for undermining the interests of employees, customers, and the community in the name of profit maximization.

As an alternative to the shareholder primacy model, the multistakeholder model considers the impacts to all stakeholders, including employees, customers, suppliers, and impacted community members, not just shareholders when making decisions. For example, reducing employee turnover, increasing internal promotion rates, and improving employee participation in resource networks are nonfinancial key performance indicators (KPIs) that are valued by those employed by the company. Customers are most likely interested in metrics around the handling of customer complaints, customer retention rates, and product innovation, while suppliers and community members are motivated by metrics related to forced labor, waste management, and responsible sourcing. Figure 6 illustrates the two main types of performance measures - financial and nonfinancial – and the key components of each type. Revenue, profit, and capital are financial performance indicators that firms commonly use to measure and analyze corporate

success. Nonfinancial performance indicators are divided into three buckets – environmental, social and governance – which comprise ESG performance. It could be argued that financial performance is to the shareholder primacy model what nonfinancial performance is to the multistakeholder model.

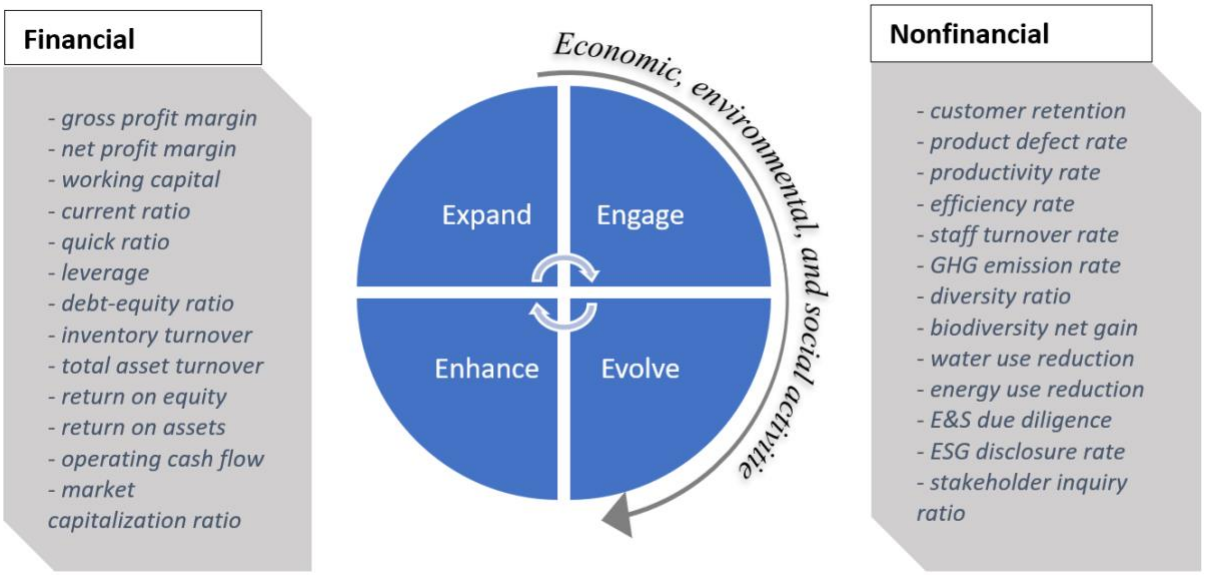
Figure 6. Financial and Nonfinancial Performance



Historically, corporations have relied on KPIs to track and report financial performance. Financial performance is often measured by currency indicators, such as an increase in financial assets or market valuation. The importance of nonfinancial KPIs is just starting to gain traction in mainstream markets. Nonfinancial performance is usually measured by societal and environmental indicators, such as a decrease in carbon emissions or an increase in the diversity dimensions of a workforce. Figure 7 provides examples of commonly used financial and nonfinancial performance indicators in Corporate America. Financial performance measures are well-known, widely accepted, and frequently incorporated into corporate strategic planning. On

the other hand, nonfinancial performance measures are less common, lack standardization, and are used sporadically by firms today, often with nonbinding terms.

Figure 7. Corporate Key Performance Indicators



While nonfinancial metrics are gaining traction with business leaders, it is rare, however, for a company to prioritize nonfinancial KPIs over financial ones, even if the long-term viability of a company depends on economic growth that is sustainable and responsible. Yet, along with more and more studies demonstrating that benefits are derived from both financial and nonfinancial performance, investors are increasingly asking questions about the ESG performance of a company and placing higher value on those companies actively engaged in managing ESG risk throughout their value chains, which has led to many wondering if the demand for ESG disclosures is truly driven by market value or, rather, by guilty consciences.

In 2019, two researchers explored how ESG performance correlates with financial performance by reviewing real estate companies, which are the perfect example of long-term value, in the Group of Seven, which consists of the countries with the strongest economies across

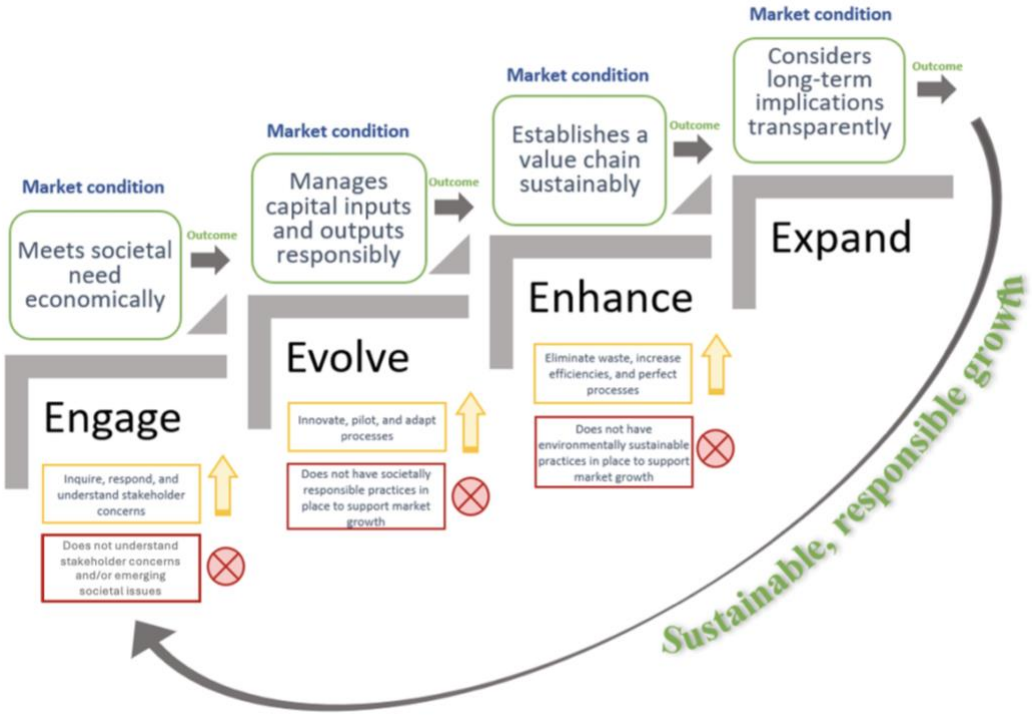
the globe, namely Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States, over a five-year period and found a positive relationship between ESG disclosure and the firm's return on assets and return on capital (Almeyda & Darmansya 2019). Building upon this study, in 2021, a group of researchers reviewed the "100 best corporate citizens" in the United States declared by 3BL Media during 2009 through 2018 and found that a commitment to environmental sustainability, consistent socially responsible conduct, and rationalized governance mechanisms positively correlate with market value, and are good predictors of future financial performance in the market (Qureshi et al 2021). The study found the correlation between environmental indicators and financial performance to be the strongest among all three nonfinancial performance measures, which prompts the question: is environmental sustainability the foundation of a healthy economy?

In 2022, a similar study reviewed the financial data and ESG scores of 150 publicly traded companies listed in the Standard and Poor's 500 index during the years 2017 through 2020 and found that companies with superior ESG performance perform better financially and are valued higher in the market compared to their industry peers (Ademi & Klungseth 2022). Another study in 2023 reviewed similar data of 3332 companies over a ten-year period, between the years of 2011 to 2020, and found that ESG performance positively correlates with corporate performance for large-scale companies. However, the same correlation was not present for small-scale companies (Chen et al 2023). The findings beg the question: does the value of ESG for companies depend on systemic scaling of ESG measures across industries, markets, and economies?

While studies show the importance of measuring success based on nonfinancial indicators, financial performance and economic growth are rarely tied to the principles of

environmental sustainability and social responsibility, which are often retrofitted to an already baked corporate strategy. In addition, unlike financial performance, nonfinancial performance lacks industry standardization and integration, which creates challenges for companies without the ability to scale ESG performance indicators. Therefore, a new model for measuring if, when, or how the expansion of a company within an industry or market is deemed responsible and sustainable is desperately needed, one that considers both the micro and macro impacts of corporate expansion and economic development on families, communities, and economies, and requires environmental and social impacts stemming from growth to be evaluated upfront during strategy development, not as a wishful afterthought. Figure 8 outlines the sustainable growth maturity process and associated challenges and benefits of each stage – from engaging with stakeholders to understand societal needs, evolving current practices to remediate risk of human rights violations, and enhancing processes to reduce inefficiencies.

Figure 8. The Sustainable Growth Maturity Spectrum



We need a new model for measuring how economic development contributes to the prosperity of healthy families, communities, and society, while also accounting for the adverse environmental and social impacts associated with corporate expansion, consumerism, and the resulting climate change. We need a prosperity model that assesses not only if the growth of a business, industry, or market truly is economical, but also if it is truly sustainable and responsible. To accomplish this, the sustainability and corporate social responsibility practices of corporations must pivot away from their yearly unchecked goals of "sustainable growth" endeavors, peppered with philanthropic campaigns, and shift towards authentic, regimented impact assessments that measure and evaluate whether the growth of assets within a particular market over a specified time frame is sustainable and responsible, not only good for the bottom line. For sustainable growth to be meaningful and impactful, companies must start asking the right questions to pinpoint exactly where their business model sits within current market conditions, so they can properly and responsibly gauge where they are on the maturity spectrum for sustainable growth, and what the appropriate next steps are to reach full maturity, or in other words, a fully sustainable business model able to responsibly grow in the market. This requires pre-production intervention and due diligence to measure and evaluate current market conditions and inform corporate decision-making.

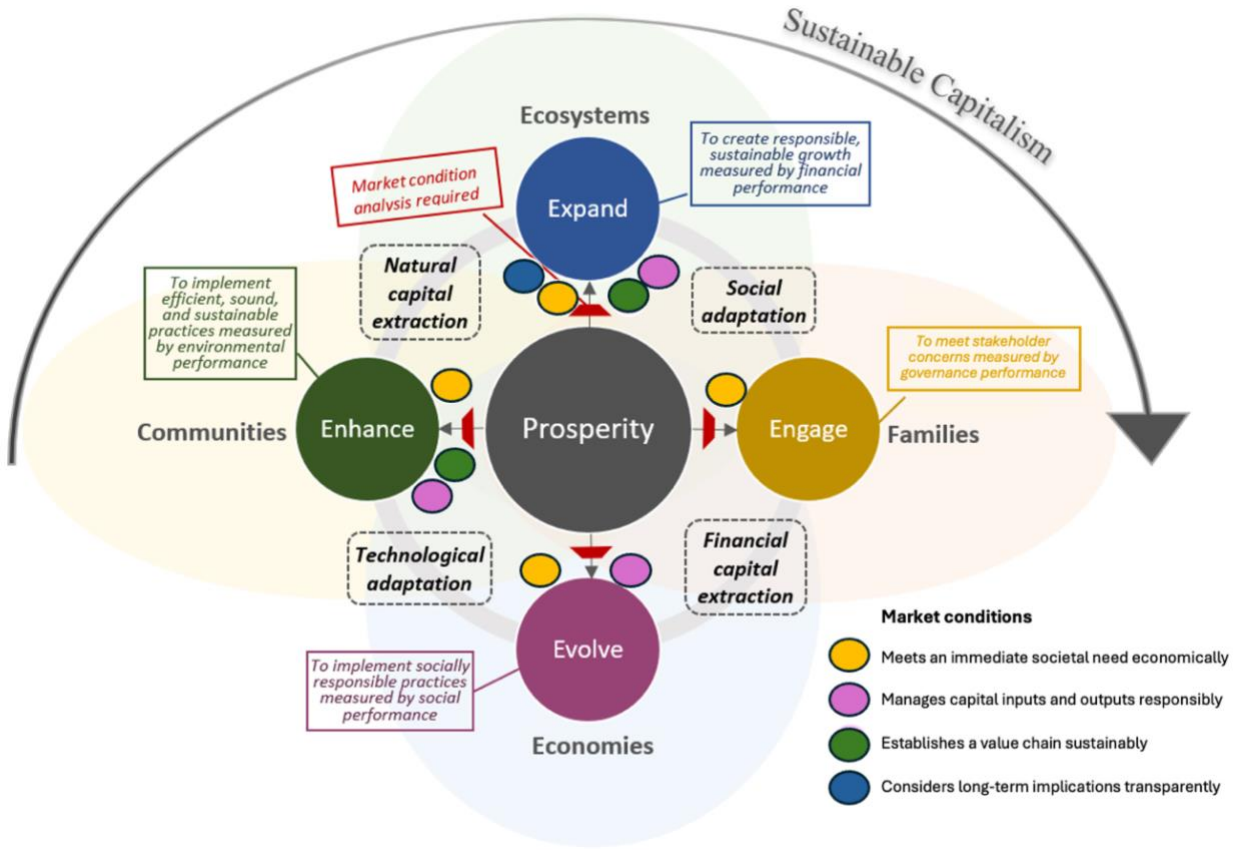
A practical application of this prosperity model is during the annual review and strategic planning process at the end of each fiscal year when a company assesses its performance and results for the previous year and sets its goals and targets for the upcoming one. Under a new prosperity model, a plan for corporate expansion would need to meet a four-part test to determine if the growth of assets is economical, responsible, and sustainable and has transparently assessed its long-term impacts. Absent confirmation that growth in an industry or market meets an

immediate societal need economically, manages capital inputs and outputs responsibly, and establishes a value chain sustainably, a corporate plan for “sustainable growth” remains an oxymoron due to the inconvenient truth that blind, unchecked growth is not sustainable nor responsible and, therefore, not viable within a new theory of prosperity. As such, in these situations, a company should focus on nonfinancial performance indicators for the upcoming year, which still maintain and often increase the valuation and long-term viability of a company.

Currently, most companies stress boundless market growth goals each year because traditional approaches to measure firm value emphasize the need for increased physical inputs to accelerate the accumulation of physical assets, which is how success has historically been measured. This unchecked corporate expansion is what is driving climate change. While some sociologists may advocate for abandoning capitalism altogether, the idea that economic growth only harms the planet and society is hard to get behind. A better approach is to balance financial performance with nonfinancial performance by advocating for a shift in how we identify, measure, and protect firm value. Success criteria should include not only financial metrics, but also measures such as employee wellbeing, customer complaint remediation, nature regenerative projects, and community engagement.

Figure 9 illustrates a New Prosperity Model which is designed to assess not only if corporate growth is economical, but if it is truly sustainable and responsible. The model balances corporate engagement, evolution, enhancement, and expansion with the needs of and impacts to society, the planet, and the economy while also considering the reliance on social adaptation, financial capital extraction, technological adaptation, and natural capital extraction, all of which are crucial to realizing long-term prosperity. The four market preconditions necessary for market expansion are illustrated, along with the goal and benefit of each market approach.

Figure 9. A New Prosperity Model



The idea that a company should not prioritize market growth as a mandatory yearly goal or indicator of performance may appear crippling to a corporate board's long-term vision or counterintuitive to tenured business leaders. However, understanding the relationship between corporate expansion, climate change, and prosperity can sharpen one's view. Instead, in circumstances where growth is not viable, a company should look to nonfinancial KPIs as its measure of success, such as increasing operational efficiency, delivering excellence in customer service, understanding evolving customer needs, or promoting innovation to address societal challenges. Other examples of nonfinancial KPIs include increasing employee engagement and satisfaction, decreasing carbon emissions, expanding stakeholder communication channels, and improving clarity and transparency in disclosures. However, with many studies showing that

firms can derive value from activities other than financial performance, what is preventing companies from incorporating ESG into its strategic planning?

Whatever the motivation may be, the stronghold on financial performance as the sole indicator of a firm's success persists with growth measured based on financial statements and traditional approaches to extractive capitalism. Within the historical growth model, firms prioritize market expansion, which is believed to contribute to the health of economies, above all else. Take for example the stock market of the 1950s compared to the value of financial assets in today. According to FRED, the value of financial assets in 1950 were about equal to the GDP, or the movement of income and spending in the economy, and financial assets today are valued at about five times the GDP. Yet, the economic measure of success continues to be tied to the boundless growth of those assets. Today's financial performance goals not only limit a company's ability to recognize and take advantage of nonfinancial measures of success and prosperity, but also promote unchecked corporate expansion regardless of the environmental and social consequences.

In 2023, researcher Marjorie Kelly published her manifesto, *Wealth Supremacy*, where she argues that wealth supremacy, or our collective bias that legitimizes limitless extraction for the wealthy, and capital bias, or our acceptance of worker subjugation within capital enfranchisement of votes by corporations, are the root causes of many of society's systemic problems. Kelly points out that we have all been conditioned to accept a rising stock market as the measure of economic success, while ignoring (or perhaps not making the connection to) the mass layoffs or sharp increase in natural resource extraction that are often what feed the bottom line to increase the profits that drive the rising stock prices (2023).

Take, for example, Exxon Mobil, which, according to Forbes, is one of the world's largest publicly traded oil and gas companies with a market capitalization of $520 billion. Forbes often publishes guidance on the top oil and gas companies to invest in, outlining how increased crude oil prices incentivize companies to increase exploration and production activities (Forbes 2024). So, in 2022, when Exxon Mobil's stock price increased by 80 percent, it was mostly due to two factors: (1) high crude oil prices and (2) the shareholder primacy model that normalizes maximizing gains to shareholders, even at the cost of uncontrollable wildfires, rising sea levels, and extreme tropical storms. At the core of extractive capitalism is the idea that our economy exists to extract limitless resources with the goal of growing and protecting financial capital at all costs, including the destructive of ecosystems and their vital services.

Exxon is an example of how the power and influence of one global conglomerate can drastically shift a market quickly and sharply. Therefore, does a new model work if not everyone buys in? While a new prosperity model may appear to work in theory, what is to prevent a large global company, or a small, coordinated group of companies, from upending the model? In other words, if ninety-five percent of companies adopt a new measure of prosperity, what is to stop the other five percent from going rogue, or continuing business-as-usual, and preventing society (and economies) from realizing the full potential of a new model of prosperity? The four boundaries – engage, evolve, enhance, and expand – are each associated with unique challenges and opportunities in the market, but what is the governance mechanism to ensure companies heed the risks appropriately and seize the benefits accordingly? This is where the role of public policy comes in.

Public Policy Implications

Policymakers must address the climate crisis as a root cause to promoting healthy families, communities, and economies. Most policymakers, regardless of party affiliation, claim to advocate for healthy families, communities, and economies. Yet, few are willing to acknowledge climate change as a root cause to many of the challenges and issues plaguing American families, communities, and economies, let alone act on climate policy. Some policymakers are even introducing and supporting new laws aimed at prohibiting private enterprise, particularly banks, from limiting investments in certain sectors based on the environmental and social impacts associated with sector expansion. In 2021, the Office of the Comptroller of the Currency (OCC) released a final rule to prevent covered banks denying a financial product or service to a person that would prevent the person from "entering or competing in a market or business segment." The rule was largely in response to new ESG disclosures that outlined how banks conduct due diligence on high ESG risk sectors, mostly carbon intensive industries or those associated with human rights abuses, and restrict the financing of sectors deemed to be outside their risk appetite.

While the OCC rule was rescinded shortly after, it inspired policymakers across the United States at all levels to introduce their own versions of "fair access" laws. For example, a number of states are enacting or considering enacting legislation to require financial institutions provide commercial clients "fair access" to financial services, including Texas, Florida, Arizona, Georgia, Idaho, Indiana, Iowa, Kentucky, Louisiana, South Dakota (Sullivan & Cromwell 2024). By applying rules designed for consumer protection against discrimination based on protected classes, policymakers are prohibiting banks from "discriminating" against oil and gas companies, firearm manufacturers, and other sectors with adverse environmental and social impacts through the use of ESG assessments. These laws seek to outright ban ESG as a financial or corporate

practice, believing it unjustly handicaps certain companies and industries purely for political reasons.

In addition, diversity, equity, and inclusion (DEI) programs have come under attack in recent years. Following the June 2023 Supreme Court decision in *Students for Fair Admissions,* which effectively upended affirmative action programs across universities and corporations, companies have started backtracking on their DEI efforts (Yoshino & Glasgow 2024). While most companies perceive DEI efforts as part of a larger sustainability strategy to address systemic inequities and issues that prevent or hinder the realization of prosperity for all, the increased politicization of sustainability issues, across all pillars and domains, is transforming the way private and public sectors approach sustainability. Further, the politization of sustainability initiatives brings with it the polarization of ESG concepts and ideals across all stakeholder groups, and often irrational decision-making.

For example, in May 2024, *The New York Times* reported that Ron DeSantis, governor of Florida – the state where studies show that 2023 was the hottest year on record with coastal waters rising to over 90 degrees and Hurricane Ian, the 2022 hurricane which killed over 140 people and caused more than $109.5 billion in damages, is now the costliest hurricane in state history, signed into law a bill that not only eliminates state funding for energy conservation and renewable energy programs, but also removes requirements that state agencies purchase fuel-efficient vehicles, among other things. The bill becomes law July 1, 2024, during a time when insurance companies are refusing to provide adequate coverage to many Florida homeowners and, for those who are approved for coverage, charging some of the highest rates in the country, and only a year after the same governor rejected $346 million in federal funding to make Floridian homes more energy efficient (Davenport 2024). Any reasonable person observing what

is happening in Florida would be correct in asking: if residents living in high climate risk regions are being adversely affected by extreme storms, increased temperatures, and the associated fallout of climate change, why then are policymakers enacting laws that appear to be sustaining, even fueling, climate change?

The onslaught of anti-ESG legislation has swept across the United States confusing many ESG practitioners and complicating well-intentioned sustainability programs. It appears policymakers are enacting laws against the best interests of their constituents, or even against their own best interests. The resulting polarization of what should be approached as evidence-based decision making is muddying the waters for sustainability leaders in both private and public sectors. This dilemma is explored by Alex Edmans in his recent article *Rational Sustainability* (2024). In it, Edmans acknowledges that the goal of sustainability, which is to create long-term value, not slap ESG labels on companies or projects to make them more appealing, is something that everyone can get behind and, therefore, the issue is not the intended outcome, but the approach to ESG. He advocates for a shift towards rational decision-making that addresses not only the benefits of sustainability but also the diminishing returns and trade-offs (Edmans 2024). Yet, regardless of how we approach it, public policy has a lot of catching up to do.

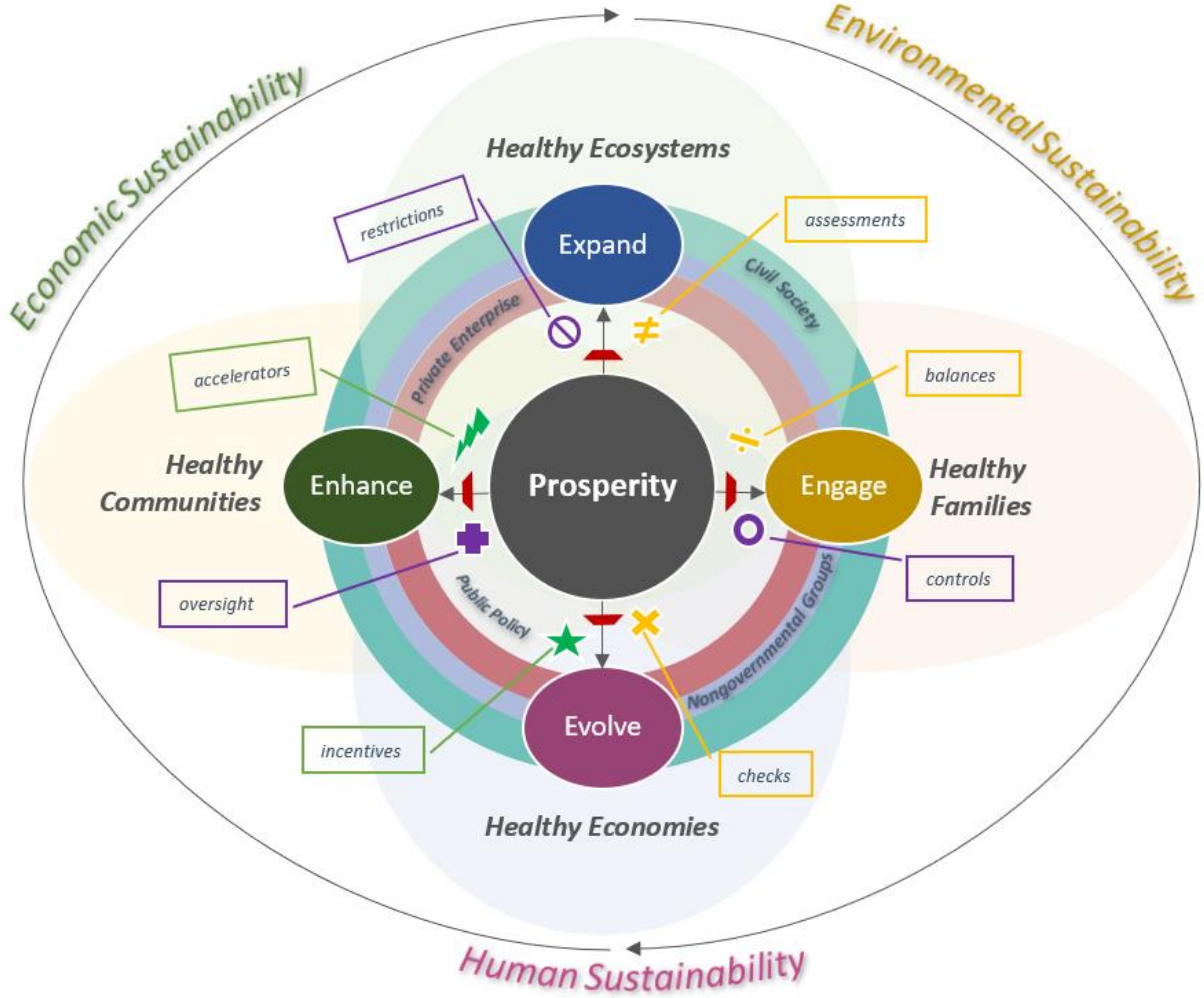
In order for sustainable capitalism to thrive within a new prosperity model, policymakers must evolve economic policy to enable, incentivize, restrict, and monitor how private enterprise expands in the marketplace, meaning they must put forth policy solutions that not only enforce and guide the understanding of the preconditions needed for responsible, sustainable growth but that also intervene when the strategic direction of private enterprise is at odds with current market conditions. However, these policy mechanisms are not new. In fact, most have been

leveraged by policymakers for decades, even centuries. What requires evolving is not the approach to policy intervention but the focus and goal of the intervention. Setting irrational decision making aside, modern policy interventions often seek to redistribute economic value amongst players in the market to address equity issues, fix prices to account for surpluses or deficits, or limit access to balance supply and demand. Yet, what most policy interventions achieve is limited to treating the symptoms of a broken system, not remediating the root causes of inequity or market dysfunction.

If we know that changes to our climate drive increased costs of food, housing, and health care, why are policies not aimed at mediating the causes of climate change? Further, if human-caused global warming is impeding our ability to freely choose our reproductive destinies, why are more people not demanding policymakers put worth effective climate policy? And, if the long-term impacts of uncheck global warming renders undesired changes to market prices, why doesn't policy require companies to incorporate a changing climate into their strategic planning decisions? The role of public policy should be to intervene when the prosperity of families, communities, and economies is at risk.

The idea of free markets without government intervention was coined during a time when economists did not have to factor in the adverse impacts of a changing climate as an externality, and, therefore, can no longer be upheld as a societal principle when it is rarely relevant to the conditions of a modern society. Figure 10 outlines the role of public policy within a new prosperity model, particularly the need for policymakers to incentivize, require, monitor, and oversee the design, execution, and measurement of strategic planning in Corporate America with a mix of preproduction, postproduction, and production stage policy interventions. In addition, the balance between environmental, human, and economic sustainability is visualized.

Figure 10. Prosperity and the Role of Public Policy



For example, the *Nash equilibrium* demands that policy outcomes consider the resulting impacts to everyone as the outcome that is determined to be best for all is also the outcome deemed best for each individual. When applying this concept to financial and nonfinancial performance measures within the new prosperity model, Nash's theory promotes the need for market preconditions to determine the strategic direction of a company. Without this analysis, it is easy (and likely) for both policymakers and corporations to make decisions based on what is best for their balance sheet and stock price, instead of considering what is best for the

environment, for society, and for the economy. Applying the *Nash equilibrium* to the new prosperity model resembles the modern debate between the shareholder primacy and the multistakeholder model. Perhaps the dilemma is less about acknowledging or understanding the impacts of climate change and more about determining whose impacts matter.

Most of what we know today about economic theory was developed during a time when woman couldn't vote, own property, or even hold a job in most industries, let alone make a fair wage. This means that classical economic theory was developed by men at a time when they did not need to (or think to) consider the impacts to the labor market if worker productivity diminished regularly over a nine-month period, often capped by a short-term sharp decrease in productively altogether. While public policy has caught up on gender equity in some areas, systemic inequities remain, rooted by a system that was designed hundreds of year ago by men and for men. How different would classical economic theory be today if those who wrote it regularly experienced pregnancy, childbirth, and caring for a newborn baby? Further, what if those who designed food, health, housing, and climate policy today were mostly Black and Indigenous women, or those most impacted by a changing climate?

Digging into this idea further, Smith's *invisible hand* underscores who benefits from market forces, claiming that we all derive value when we each make rational decisions in our own self-interests. This theory provides another example of policy mechanisms that could benefit the new prosperity model, but only if we assume that all players in the market are rational, meaning that when they act in their own self-interests, they are also acting in the best interest of everyone. Knowing that the majority of policymakers today are affluent white men, and thinking about Edman's *rational sustainability* theory, we must consider the possibility that many policymakers, along with corporate boards, engage in irrational activity at times, or, in

other words, make decisions against their own best interests in the long-term by focusing on their own gains in the short-term. Could it be that policymakers are engaging in irrational decision making because they are focused on what benefits their own self-interests in the here and now?

Perhaps, the answer can be found in Bataille's *excess of energy* where a surplus in the market demands allocating, either productively or recklessly. In historical growth models, the approach and method to excess is governed by only one consideration: what best serves the individual. However, by applying this theory to a new prosperity model, excess energy is more likely to be spent productively due to the market conditions that must be met before growth in a certain area is deemed viable. When growth is determined to not be productive, excess energy is channeled into other productive endeavors which contribute to both financial and nonfinancial performance, and, ultimately, benefits all of society. Perhaps policymakers need reminding of their duty to represent their constituents. A 2023 *Harris poll* found that more than half of Americans, across race, ethnicity, age, gender, and political affiliation, believe that extractive capitalism is headed in the wrong direction and no longer benefits them or their families.

While many references to the historical work of sociologists and economists can be leveraged to demonstrate the importance of nonfinancial performance measures, the most compelling may be Nietzsche's *test of the eternal return.* In his theory, Nietzsche asks us to consider the livability of experiencing the same moments in our life over and over again and, in doing so, conclude whether our choices and the resulting consequences are worth experiencing in perpetuity. The concept, while uncomfortable to some, shines a light on the human condition as a consequence of our collective choices. Therefore, if applied to policymakers and corporate boardrooms, the *test of the eternal return* forces both to consider the long-term consequences of

every decision they make, which also forces them to consider the impacts of a changing climate in the design, execution, and oversight of their annual strategic plan, priorities, and goals.

The only way a new prosperity model works is if public policy does its part to implement the governance mechanisms needed to ensure all market players are playing fairly before and during the match, not simply intervene after the game has been played in an attempt to balance the score. Here, the role of public policy depends on early production stage policy intervention, which is often rare. Policymakers must be willing to intervene before corporate expansion wreaks havoc, intentionally or unintentionally, on an ecosystem or a community. While oversight and enforcement actions after the fact are needed to correct when irresponsible or unsustainable growth has taken place, pre-production and post-production policy interventions cannot be solely relied upon for oversight of a new prosperity model. Options regarding form, format, and delivery are vast and wide-ranging. Timing, however, is less flexible.

While progress on climate action remains slow, there has been some movement on climate in the public policy arena. For example, on March 6, 2024, the Securities and Exchange Commission issued a final rule that requires registrants to provide climate disclosures in their annual financial statements, including effects of severe weather events and other natural conditions, carbon offsets and renewable energy certificates, and financial impacts from severe weather events and climate-related targets or transition plans. The federal regulation comes months after the State of California passed its own law with similar requirements. In addition, on July 31, 2023, the European Union adopted the Corporate Sustainability Reporting Directive, which requires more then 50,000 companies doing business in Europe, including tens of thousands of companies based on the United States, to annually disclose the environmental and social impacts within their business model, strategy, policies, and due diligence, including

climate risk management, respect for human rights, oversight of anticorruption and bribery issues, and workforce diversity dimensions. While additional rules around managing environmental and social risks and reporting on nonfinancial performance is needed, the adoption of all three laws affirms the importance of nonfinancial performance measures on a firm's annual disclosures and provides hope that the evolution towards a new prosperity model may be possible.

Chapter 3 Conclusion

With all the recent studies coming out of academia and the reports being released by governmental agencies, we have plenty of evidence that climate change is positively correlated with factors contributing to significant financial strain to American households such as increased destruction to property, higher expenditures on groceries, and added health care costs from heat-related medical needs. With increased knowledge of the positive relationship between global warming and costs of living, the implications of a changing climate to society are clear. Climate change directly impacts the prosperity of families, communities, and economies, impeding livelihoods through increased costs of living, which exacerbate parenting costs, influence family planning decisions, and prevent households, communities, and economies from healthy, sustainable growth and resiliency. However, few policymakers, community leaders, heads of households, or boards of directors make the connection between the climate crisis and social safety net programs, supplemental food vouchers, employee health benefits, or the housing market.

Over the last decade, the idea (or hope) that technological advances will be enough to address climate change before catastrophic events occur has gained popularity among many

optimistic sociologists, economists, policymakers, and everyday inhabitants of Planet Earth. While the idea of technology saving us from ecological disaster is compelling, it cannot account for the fact that climate change is a multi-dimensional, multi-faceted, complex and systemic problem with drivers deeply embedded in all areas of society. We need to rethink technology as the silver bullet for mitigating and managing climate risk and start having the difficult, uncomfortable conversations about how our lifestyle choices and purchasing decisions uphold unchecked corporate expansion and, ultimately, is the main driver of global warming. Unfortunately, there is no silver bullet for solving the climate crisis, and technology alone will not save us. The only effective pathway for addressing the climate crisis and its associated adverse impacts is through deep, systemic change that requires a new measurement for corporate expansion and success. A good place to start is with a new prosperity model that assesses not only if the growth of a business, industry, or market truly is economical, but also if it is truly sustainable and responsible.

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Conclusion

I spent the first twenty years of my life in South Dakota on occupied Očhéthi Šakówiŋt, better known as the Great Sioux Nation, and Yankton land. In 1989, before I began formal education and two decades after the federal recognition of Columbus Day, the South Dakota State Legislature unanimously voted to replace Columbus Day with Native American Day, becoming the first state in the United States to do so. Yet, it would take another two decades, when I took my first job after undergrad with the Social Security Administration and moved away from South Dakota, for me to understand the impact of this change on me. Sitting at my desk one morning in early October, I remember seeing Columbus Day on the federal calendar and feeling both shock and anger that, outside of South Dakota, people celebrated the day differently than how I was raised.

Growing up, I have many memories of learning in school about the bravery and selflessness of great Chiefs and of the beauty of Indigenous lifeways each year on Native American Day. I remember one year building a replica of the great city of Tenochtitlan out of sugar cubes. Another year, I baked bread with my classmates alongside a Lakota woman who told us of how her ancestors handed down the sacred recipe and accompanying story of family and friendship from generation to generation. As I got older and developed new friendships, I learnt of tribal ceremonies and fascinating customs from my Lakota friends. My friend Nikki was the first to tell me a story of the giveaway, one of the many stories that had been shared with her by her Lakota elders of the great leaders who lived before her and the beautiful horses and blankets they gave away at their giveaway, known as the one true measure of success and prosperity for her, her people, and their way of life.

When settlers first hear of the revered giveaway ceremony, it is often confusing to them due to the conditioning of the settler state that begins with children from an early age, rendering it difficult to reconcile giving away wealth to others while sustaining status for oneself. But can you imagine what our society would look like if we based success not on degrees and titles but on what we give back to our community? Or if the stories of great leaders that we told were not about their conquests of other cultures, lands, and people but about what they gave away to others as a symbol of their prosperity? How differently would children envision their career paths or college majors if the probing questions from uncles and grandparents at family gatherings centered around a measure of success dependent upon giving? What would be the impact of the generational shift that would occur from embedding the teachings of Indigenous lifeways in all early childhood education?

True prosperity depends upon the realization of a few core principles. The first being full bodily autonomy, or the right to freely choose to have a child, to not have a child, and to raise a child in a healthy environment. The impacts of climate change are vast, intense, and crippling, from rapid urbanization and homelessness to heat-related illnesses and soaring medical bills. However, the consequences of a changing client are not shared equally. Women have historically experienced oppression at a higher rate than other demographics, particularly within communities of color on the frontlines of climate change, along with having their unique health care needs ignored when compared to the population at large. With the adverse impacts of climate change compounding throughout communities, more families are experiencing increased costs of living, often resulting in family sizes decreasing, and not always voluntarily. Thus, the reclaiming of bodily autonomy through the lived experiences of women, particularly women of color, is essential for reproductive justice and prosperity to be realized. For what is a better

measure of a society's prosperity than the ability for all members to freely choose when, how, or if to have a child?

Second, prosperity must be underscored by a measure of progress that considers the lasting impacts to everyone, and from the vantage point of those most impacted. However, today's corporate expansion as a continuation of settler colonialism exists to extract natural resources and worker productivity to the maximum in an effort to grow and protect shareholder value. And, with women of color being most impacted by climate change, modern corporate feminist empowerment campaigns aimed at liberating women are actually contributing to climate change and, ultimately, the oppression of low-income, communities of color, especially nonwhite women. Therefore, a reconstruction of feminism is urgently needed, one that reimagines what prosperity means and takes a stand against white feminism's marriage to white supremacy, capitalism, and colonialism. We need to call out the relationship between feminism, often lauded as the path to equality in corporate success models, and climate change and its collective understanding of prosperity through the shareholder primacy model. We need to decouple modern white feminism from consumerism and corporate colonialism and remediate white feminism's understanding of bodily autonomy rooted in racist and classist policies. For if the modern, mainstream campaigns that claim to promote, create, and protect the prosperity of all, regardless of gender, race, or class, are actually contributing to the oppression of many in the name of progress, what hope do the disenfranchised have in realizing prosperity within a capitalist society?

And, finally, the measure of prosperity must go beyond economic value to include a measurement of nonfinancial value based on impacts to the environment and society at large, not just those with capital and corporate voting rights. Classical economic theory was written at a

time when climate change did not need to be considered as an externality. The shareholder primacy model was designed before knowledge of the adverse environmental and social impacts associated with business models was widespread. The corporate governance norms of today do not contribute, protect, or promote the prosperity of all families, communities, and economies; it exists to serve only those with capital and corporate voting rights. Modern society's measure of success through maximizing shareholder value only contributes to the prosperity of the elite. Therefore, we need a new model of prosperity for measuring how economic development contributes to the prosperity of all families, communities, and societies, while also accounting for the adverse environmental and social impacts associated with corporate expansion, consumerism, and the resulting change to our climate.

At first glance, a new prosperity model may seem like a sharp departure from everything we know about economics, sociology, or progress. However, as a society, we have lived through many revolutions, all of which at one time or another, seemed radical, impractical, or downright unattainable to many. For example, prior to the agricultural revolution, often referred to as the wide-scale transition from a hunting and gathering lifestyle to settlements built around farming, humans were a nomadic society that followed weather patterns and herds of animals to sustain our survival (Chu et al 2022). Or, consider the industrial revolution(s), which is remembered as the large-scale transition from a mercantile economy towards one supported by stable manufacturing processes, where communities evolved the making of goods by hand towards machine production, resulting in a great increase in efficiency and output (Clark et al 2008). Another example can be found in the more recent digital revolution, where society experienced a rapid shift from the traditional industries established during the industrial revolution to an economy centered around information technology, significantly changing the way information is

processed and transmitted and laying the foundation for internet communications as the driving force of social evolution (Helbing & Helbing 2015). All of these revolutions completely upended the way people lived, worked, and raised their families, built upon newfound knowledge that there was a better way to live. And still, we continue to evolve, to get better, and to change our way of life when we discover that a better way is not only possible, but also needed for our long-term survival.

We are now in the midst of a sustainability revolution, driven by studies, reports, scientific findings, innovation, and the knowledge that extractive capitalism no longer meets our needs (and maybe it never did). Once complete, the sustainability revolution will have transformed everything we know about economic growth and its success criteria and indicators. The sustainability revolution will reorganize our economy around carbon neutrality, realign economic prosperity with the health of families, communities, and the planet, and evolve boundless extractive methods of production towards ones built around sustainable, responsible growth. What may seem radical, impractical, or unattainable today, is the start of a societal revolution that will transform, yet again, the way humans live, work, reproduce, and measure our collective prosperity.

Yet, while I offer a new model for measuring prosperity, one I believe is better fit and able to promote, protect, and understand the longevity of markets, economies, communities, and ecosystems; just as technology is not a silver bullet for solving climate change, a new model of prosperity cannot and will not address or remediate all the problems and challenges associated with modern extractive capitalism. Systemic issues such as structural racism, classism, xenophobia, corporate greed, state corruption, misogyny, and a plethora of others are deeply rooted within formal and informal institutions within our society, contributing, at varying

degrees and intensity, to the dysfunction and oppression of modern extractive capitalism. A new prosperity model seeks to prevent the irresponsible and unsustainable mode of corporate expansion fueling climate change, but the model is not designed to address all the root causes of poverty, inequity, or corporate greed, or even a majority of them. These systemic issues are complex, vast, diverse, and evolving, and each requires a series of related, multi-faceted, but separate solutions designed by and for those most impacted by them.

Rather, a new prosperity model provides a view into how abating climate change, by remediating the highest contributing factor to human-caused global warming, interacts with other societal challenges; a view that could be used to better understand the correlation between extractive capitalism and food, housing, and health care insecurity, along with other societal, environmental, and economic challenges. As discussed, climate change did not create malnutrition, vagrancy, or medical debt, but it does increase the number of people experiencing each and add complexity to the experiences of those already living with them. However, additional research is needed to explore the effectiveness of the model in both the private and public sectors, along with if or how the model interacts with other root causes of increased food, housing, and health care costs, or other issues facing society today, and the mode, metric, and fitness of various quantitative and qualitative measures for each market condition and their associated outcomes at both micro and macro levels.

Indeed, there are many possible extensions of this research, but the criticality of its implications demands that too much energy not be spent on where to start but rather on how quickly we can begin, for the tightly woven, deeply embedded relationship between climate change, reproductive justice, and economic prosperity can no longer be ignored. Further, while through this research I aim to make a valuable contribution to the growing body of research on

environmental, social, and economic policy and join the emerging dialogue around corporate social responsibility and sustainability strategy and the proper measure of economic prosperity, I also hope to uplift the reproductive justice framework and take a step towards claiming accountability for my role in settler colonialism, and by doing so, encourage other white settler women to examine and acknowledge their role within corporate colonialism as a communal step towards decolonization, disrupting white feminism, and progressing towards a new model of shared prosperity.

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