



RUTGERS

Dialogues @ RU

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Dialogues @ RU

WELCOME TO DIALOGUES @ RU

Please enjoy this collection of student essays from Rutgers undergraduate research and writing courses. Every semester the Writing Program issues a call for papers from students enrolled in *Research in the Disciplines* sections. While course topics vary widely, as evident in just a few of this volume's titles, all "English 201" sections share a common pedagogy focusing on developing a critical analysis of texts, and a strong student voice. The work does not end when students find appropriate sources, in fact, that is the beginning. Critical insight, reflection, contemplation, and a thorough analysis of the texts, all contribute to the process of developing an independent and original idea. In learning how to craft an academic essay, students find themselves contributing to a scholarly discourse unfamiliar to them only months before. The best of this research is then selected for publication by an entirely undergraduate editorial board.

The authors work closely with student editors who are enrolled in the Writing Program's *Editing Internship*. All phases of the editorial process are collaborative as student-authors and student-editors revise papers for *Dialogues@RU*. A tremendous amount of work and dedication, from both authors and editors, is what makes this undergraduate journal proud to showcase its 16th volume.

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CONTENTS

Foreword • v

- Samantha Tse**, Urban Development: Issues in Environmental Justice • 1
- Gabriella DeGregorio**, The Risk of Risk Assessment Programs within the American Criminal Justice System • 13
- Sarah Velez**, The Potential of Using Yoga as Theapy for Pediatric Psychiatric Conditions • 27
- Reshma Krishnaraj**, The Effect of Racial and Ethnic Disparities on Maternal Mortality and Morbidity Rates • 39
- Harshill Patel**, Shopping for a Bargain: The Retail Outlet • 49
- Sheila Chumbimune**, Embracing Solitude in Scum's Wish: Navigating through Contemporary Japan • 61
- Manav Parikh**, Biofuels: The Future of Fuels • 73
- Paulina Gutowski**, Mindfulness of Meat-Eating • 90
- Tara Krishna**, Finding Feminism in Addiction Recovery • 100
- Timothy Kim**, Death by Fanaticism: A Study of Celebrity-Obsessed Individuals and Their Mental Health • 113
- Joseph Xie**, Big Data: What is Your Privacy Worth? • 127
- Kristine Le**, Differently-Abled Individuals as Sexual Beings • 137
- Maryjo Hobeika**, Which is it this time? E. Coli or Listeria? • 148
- Amy Zheng**, The Sharing of Culture Through the Globalization of K-pop • 159
- Dhviti Patel**, The Leaky Pipeline Menacing Women's Success: Dissecting Gender Biases in the Healthcare Profession • 172
- Rhys Hagen**, The Importance of Human-Animal Communication and Its Implications • 187

- Adam Giovanelli**, *The Camera in the Digital Age: Photographic Memory, Truth, and Cognition* • 198
- Divya Pentyala**, *Sub-Saharan Africa and the Impact of the Gender Gap on Agricultural Productivity* • 214
- Meryem Kalebek**, *Racial Disparities in Prenatal Healthcare* • 226
- Philippe Chao**, *Instagram: The Authentic Self Masked Behind the Picture-Perfect Facade* • 238
- Ashley Angarola**, *Don't Be So Quick to Veto Keto: How a Low-Carb Diet Can Impact the Mind* • 248
- Kristina Patel**, *Health Power to the People: How Telemedicine Allows for Maximization of Patient Resources* • 259
- Jenna Gannon**, *Evaluating Perfectionism, Stress, and Rumination: Why Some Cannot Cope with Criticism and Failure* • 273
- Angel Thomas**, *Cultural Appropriation in Fashion: The History, Reality, and Relevance* • 286
- Alisha Zhu**, *A Perfect Imperfect Performance: Remodeling the Model Minority* • 298
- Sunny Huang**, *Arctic Indigenous Perspectives Within Climate Adaptation Strategies: The Relevance of Traditional Knowledge within Western Science* • 314

FOREWORD

Since the publishing of *Dialogues@RU* Volume 15 last spring, quite a bit has changed at the University, and quite a bit remains uncertain. In the fall, many students and faculty returned to in-person classes, offices, and dorms. Campuses seemed normal again. By the spring semester, Covid variants spiked infections, and classes returned to online formats for two weeks. Then, we were right back in the classrooms again. This is the uncertainty students have had to live through for the past two years. Jarring schedule shifts, an unclear end to the pandemic, concerns for the safety of family and loved ones, are disquieting interruptions in our lives. However, what is unknown isn't always bad.

Student-writers, whose exemplary essays are featured here, all begin their research with several unanswered questions. They must be open to the possibilities of what they find in scholarly journals and books. To foreclose on ideas that do not fit with a vision of the project will produce only a weak, already-tread thesis. Instead, these young writers have chosen to dive into the unknown and remain objective to what they uncover, allowing their arguments to evolve organically. What emerges from this process is a collection of superbly-crafted analytical essays.

Volume 16 includes a broad range of topics. Here are only a few of the titles: “The Mindfulness of Meat-Eating”; “Using Yoga as Therapy for Pediatric Psychiatric Conditions”; “Differently-Abled Individuals as Sexual Beings”; “A Perfect Imperfect Performance: Remodeling the Model Minority”; “Health Power to the People: How Telemedicine Allows for Maximization of Patient Resources”; “Which is it this time? E. Coli or Listeria?”; and “The Importance of Human-Animal Communication and Its Implications”.

In preparing these research essays, students enrolled in *Research in the Disciplines* allow themselves to explore questions and integrate knowledge from multiple sources. Ideally, students are not sure the shape their work will take for several weeks into the course. And that is where writing in the unknown works best. We hope you will enjoy the exceptional results.

As always, I would like to thank the indefatigable Lynda Dexheimer, Executive Director of the Writing Program at Rutgers. Dr. Dex-

heimer's steadiness in the face of the unknown the last few semesters is a lesson for us all. In addition, I'd like to thank the wonderful and dedicated editorial interns who work one-on-one with student-authors. *Dialogues* relies on their knowledge and skill in helping to publish this journal.

Tracy Budd

Editor

Rutger University

Samantha Tse

Urban Development: Issues in Environmental Justice

ABSTRACT

The growing appeal for greener infrastructure due to climate unpredictability has sparked a sustainability craze in urban lifestyle choices among the world's wealthiest people. City planners are using this information to their advantage to attract a lucrative workforce. However, cities are planned with the expectation to last for multiple generations and the retrofitting of green infrastructure disrupts the continuity of past planning. This raises the question: how are city planners, in the context of climate change, creating a sustainable future for all people? The significance of this question is that infrastructural changes must be equally beneficial to all city residents to be sustainable. The main points discuss the source of institutional power that city planners use to justify social inequities. New York City, a leader in innovative solutions, has resorted to the construction of green infrastructure in its disinvested neighborhoods. Driven by profit-gaining incentives, New York City planners knowingly place vulnerable communities at increased risks of environmental hazards and rent inflation. These factors lead to the displacement of vulnerable communities which creates social unrest. Problems that arise from peoples' unequal exposure to environmental harm and distribution of environmental amenities creates the need to establish environmental justice. The conclusion presents the potential implications of how environmental justice can be used in urban planning today to achieve sustainability.

INTRODUCTION

How are city planners, in the context of climate change, creating a sustainable future for all people? More than half of the human race finds permanent shelter in towns and cities which cover between 0.4% to 0.9% of the Earth's land surface (IPCC, 2019). In total, these relatively small regions of the world contribute to three-fourths of the world's total carbon emissions --driving the issue of climate change as the average land surface air temperature rises to 1.5°C above pre-industrial times (IPCC, 2019). The effects of climate change are becoming more noticeable as daily news outlets cover the devastation of rising sea levels and storm surges that are ravaging nations and impacting the global economy. "Urban areas

are particularly susceptible to weather-related hazards” because they are densely populated, dependent on public means of transportation, and require an unabating energy source to carry out every-day functions (Reckien & Petkova, 2017, p. 1). Cities, being both the culprit and the victim, must brace for the potential threats of climate change because it exacerbates the preexisting stresses of economic stability and land-use change (Krellenberg et al. 2017, pp. 409-413). However, city-initiated precautions against climate change are neither felt nor distributed equally; therefore, innovative approaches for comprehensive analysis are needed to fill the informational gaps that separate city planners and city residents (Krellenberg et al., 2017, p. 413). The responsibility to protect human lives and a nation’s economy against climatic threats is often placed on local governments and urban planners who design the functionality of cities (Reckien & Petkova, 2017, p. 2). This engenders a “technocratic, politically neutral approach [in] solving environmental problems” (Checker, 2011, p. 212) as leaders of highly revered cities, like New York City, attempt to “boldly meet challenges and capitalize on opportunities” (NYC.gov, 2011).

New York City is one of many urbanized areas that potentially faces a great loss due to climate change; however, its unique political, economic, and social makeup requires a complex approach in combating the issue. Seen as an epicenter of global commerce, New York City attracts the best talents from all over the world to work and live within its city lines (NYC.gov, 2011). Nearly 8.4 million people reside in the 5 boroughs of New York City today, all declaring their identities across a large spectrum of races, ages, and income brackets (U.S. Census Bureau, 2018). In addition, New York City’s geographic placement makes it susceptible to floods and rising sea-levels since it is a city with 520 miles of coastline. Although immediate action is needed to defend all cities against climate change, not everyone in New York City can afford to think altruistically beyond their day to day needs for survival. There is a large disconnect in New York City inhabitants: from those who are able to enjoy the modernized and highly advertised districts of New York City, to those who live in historically disinvested neighborhoods where the conditions are undesirable in today’s housing market. Essentially, those who are demanding change for a more “sustainable future” are those who can endure the increased monetary value of health and safety that comes with it.

City governments employ green infrastructure development and land-use change with the rationale of “serving the great[er] public good” (Anguelovski et al., 2019, p. 135). These two approaches repurpose

degraded land into spaces for leisure and create boundaries that limit urban expansion into preserved lands. This form of “smart city planning” not only supplements the lives of all city residents to attain a healthier lifestyle, but addresses the city’s need to protect itself from climate-related hazards. Metropolises, like New York City, view these redevelopments as an opportunity to control city aesthetics to lure entrepreneurs and a highly trained workforce. Here, “the economic implications of sustainability become even more important” because cities are competing to be the first to “adopt and commercialize new services and infrastructure” that will withstand climate change and encourage business leaders to bring their companies (NYC.gov, 2011). What motivates green development in cities are the benefits for the common good, but city officials neglect the means of a fair transition for marginalized communities. This highlights the unethical treatment towards New York City’s most vulnerable neighborhoods and their exclusion from decision-making discourses. These problems persist in urban planning today; therefore, it alludes to the argument that city planners favor profit-gaining ventures designed to improve the city’s appearance, with the subsequent and intended effect of displacing marginalized communities.

This paper will focus on the environmental justice issues that are encountered when a city’s government, its urban planners, and its elite clientele attempt to alter the city’s landscapes to be more eco-conscious and “sustainable”. The first section, “A Greenwave Hits New York City”, examines the current use of the word “sustainability” in urban development and how environmental gentrification has infiltrated city real estate to disadvantage various communities. The second section, “Zoning Laws that Perpetuate Disintegration”, will explore the weak points of New York City zoning laws as well as the causes and effects of climate change on vulnerable communities. Finally, the third section of this paper “Adaptive Urban Planning Projects”, will showcase collaborative efforts between city officials and urban developers that depict a more accurate image of a sustainable city.

A GREENWAVE HITS NEW YORK CITY

Influence over the development of green infrastructure in New York City is a privilege possessed by a fraction of its total population. These environmental advocates are generally middle to upper-class residents who fit the description of knowledge-economy workers whom cities already

entice in order to spur innovation and grow their local-advanced service economy (Anguelovski et al., 2019, p. 136). Cities planners frequently overlook the adaptation needs of marginalized communities because their perception of future impacts from climate change are “influenced by ethnicity, gender, and income” when determining the allocation of various protective resources (Reckien & Petkova, 2017, p. 10). This undermines the meaning of environmental justice because it does not entail the equal involvement of all populations in the distributional and procedural aspects of environmental decision making (Pearsall, 2010, p. 873).

When city officials condone the overshadowing of environmental justice for the satisfaction of the city’s most elite residents, it creates an issue of environmental privilege. These groups demand city officials to fortify city infrastructure, including the renovation of numerous neighborhoods which they believe can serve a greater use for leisure and aesthetic benefits. However, not all New York City residents view the benefits of green infrastructure as “urgent, indispensable, and long-term” which city officials act upon (Anguelovski et al., 2019, p. 139). Harlem is one of many neighborhoods in Manhattan to fall victim to the middle to upper-class greenwave. Greenwave, a term coined by Melissa Checker, is a process of environmental gentrification that “builds on the material and discursive success of the environmental justice movement and appropriates them to serve high-end development” (Checker, 2011, p. 210). Gentrification within Harlem has allowed development corporations to beautify the disinvested neighborhood into a place of privilege and pleasure for those who can afford the price (Anguelovski et al., 2019, p. 133). The “influx of economic development” has “launched the average sale price of” apartments by over 93%, which pressured Harlem’s homeless population out of their places of refuge and replaced many self-built businesses with high-end stores (Checker, 2011, p. 211). Through these acts of market led-gentrification, perpetuated by eco-conscious and affluent environmental advocates who demand the implementation of greener infrastructure, Harlem is at risk of losing its social character as a traditional ethnic enclave of the black community (Kostrzewa, 2017, pp. 22-23).

Many of these changes have been occurring in tandem to the creation of New York City’s sustainability plan, PlaNYC. This sustainability plan focuses on “the physical city, and the functionality of its infrastructure” to respond to the challenges of the changing climate and “build a greener, greater New York” (NYC.gov, 2011). Cities all around the world have also taken the initiative to create their own sustainability

plan, which in turn has created a new competitive market for sustainability. It has reached a point where cities are rebranding themselves as more sustainable than each other to harness prestige and capital from the global marketplace for commercial and residential investment (Checker, 2011, p. 213). However, this branding of sustainability is often misunderstood and not followed through with acts that fulfill its true meaning. Sustainability is commonly conceptualized in accounts of three dimensions: environmental stewardship, economic prosperity, and social justice (Pearsall, 2010, p. 873). City planners often champion the environmental and economic benefits of sustainability over the social component which can be seen in the redevelopment of disinvested neighborhoods, like Harlem, and in the new construction of cities, today.

Critics have argued that environmental gentrification has made “neighborhoods cleaner and safer places to live”, thus improving standards of living for all city residents (Pearsall, 2010, p. 878). The previous sentence is a Greenwave framing concept that demonstrates how the middle- and upper-class fuel and validate the success of the environmental initiatives that are created to enhance the city. It may be true that the benefits resulting from these economic and environmental changes are well worth the investment for a city’s prosperity, but it is at the cost of communities who are unable to cope or adapt to the change – making them vulnerable to displacement. Especially within the housing market, rent prices are the leading reason why marginalized communities leave their homes. These matters not only victimize people of low financial statuses, but also “elderly residents, residents in rent-stabilized units, and residents receiving government assistance” (Pearsall, 2010, p. 880). It is the implicit actions of rent increases that pressure residents out from their own homes. This reinforces the idea that residents of marginalized communities are unwanted in the final vision of the city.

ZONING LAWS THAT PERPETUATE DISINTEGRATION

City officials and urban planners are utilizing zoning laws to endorse profit-making enterprises that inadvertently harm low-income communities. Zoning laws, as defined by PlaNYC, are “a type of regulation that governs the use, bulk, and density of development in the city” which serves as “a primary tool” when deciding the location or relocation of different types of infrastructure (NYC.gov, 2011). The unequal enforce-

ment of protective zoning laws subordinates social equity and allows environmental hazards to go unchecked in sparsely populated regions. This means that areas of low priority (i.e. those sparsely populated regions) to the economic expansion of New York City are left to the discretion of large corporations in their production practices. These lands are often defenseless against natural disasters caused and intensified by climate change since human innovation is not directed towards land preservation (Reckien & Petkova, 2017, p. 11). The New York City government is the body that regulates the city's land use, and its waterfront zoning laws legally permit the construction of critical infrastructure near largely low-income neighborhoods (Bautista et al., 2015, p. 667). This permitance results in large corporations not bearing the full environmental cost of its operations, leaving the victimized community to deal with the consequences. This displays the blatant disregard city planners have for non-profitable neighborhoods.

Zoning laws are institutional failures of city planning when they are not properly enforced because they disproportionately expose marginalized communities to health risks. New York City's waterfront zoning laws allow for the clustering of "water pollution control plants, waste transfer stations, energy facilities, and heavy manufacturing" sites on its waterfronts – known as Significant Maritime and Industrial Areas or SMIA's (Bautista, et al., 2015, p. 664). Each of the facilities listed above is known to use toxic chemicals in its production of goods and services. With increased frequency of tropical storms due to climate change, the flooding of these facilities can spread "unsecured heavy chemicals throughout these waterfront communities" posing greater health risks to already overburdened communities (Bautista, et al., 2015, p. 668). Four of the six SMIA's in New York City are located on the shorelines of the most populous borough, Brooklyn (U.S. Census Bureau, 2019). With Brooklyn's shorelines already at high risk of natural disasters from climate change, those who live between the SMIA buffer zones and hurricane storm surge zones are exposed to the most environmental health issues. Moreover, the communities that live in these overlapping regions are found to be predominantly low-income, uninsured residents (Bautista et al., p. 2015, p. 676). This is an alarming fact because if a disaster were to strike on the shorelines of Brooklyn, these marginalized communities may not recover and will have to leave their homes.

In stark contrast, just across the East River from Brooklyn is the waterfront of Lower Manhattan, where zoning laws are stringent to

maintain its current infrastructure. The Lower Manhattan region represents “10% of all New York City jobs” and is revered as the economic and financial capital of the world (NYC.gov, 2019). When Hurricane Sandy struck land in 2012, New York City was confronted with its lack of preparation to face climate change (edc.nyc, 2019). In light of this threat, the number of climate change deniers in New York City began to dwindle as the effects of climate change could not be denied. The calamitous event “galvanized local communities... to address climate change impacts on the industrial waterfront” (Bautista et al., 2015, p.675) and pushed city planners and community activists to work towards retrofitting green infrastructure and public green spaces-- in hopes of mitigating climate catastrophe. This can be seen through the immense media coverage Lower Manhattan received when Hurricane Sandy devastated its subway systems and piers. Yet community-based resiliency efforts were not equally made for the vulnerable communities across the East River that surround Sunset Park, Brooklyn Navy Yard, or any of the other six SMIA regions. Here, it is evident that New York City favors its profit-gaining ventures over its social responsibility in sustainable development.

Zoning laws are fundamental to the fragmentation of city neighborhoods because they grant the physical separation of buildings by land use ordinances, leading to social exclusion in urban planning (Krellenberg et al., 2017, p. 417). The main use of fragmentation in cities is for the “spatial distribution of economic ‘goods’” such as labor and specialized districts (Krellenberg et al., 2017, p. 417). Consequently, they institutionalize separations in communities from the direction of policy-makers and urban planners. City officials have argued that they do not intentionally inflict the hardships in public health and environmental vulnerability on low-income communities with the use of zoning laws. It is understandable that city planners cannot predict the potential threats of climate change or solve all the issues that fan out from fragmentation, but the performance standards that regulate the surrounding SMIA districts today are minimal and outdated. Many of these regulations were enforced prior to “the establishment of the US-EPA and Federal Environmental Laws” in 1961 (Bautista, et al., 2015, p. 679). This is an inexcusable failure of city planners because it emphasizes their lack of incentive to think sustainably for low-income communities. New York City has the human capital and technology to equitably assist vulnerable communities all over the city, but they continue to allocate resources only to the more lucrative regions of New York.

ADAPTIVE URBAN PLANNING PROJECTS

The designing of resilient cities while guaranteeing equal access to environmental benefits for all residents continues to perplex city planners today. Cities are heavily path-dependent in the fact that they are “infrastructural[ly] and behavioral[ly] lock[ed]-in: once built, they are extremely hard to change retrospectively” (Zenghelis, 2016, p. 7). However, innovative thinking has led city planners, as well as large corporations, to look closer at the present conditions of their city to find sustainable solutions for pre existing problems. As a result, the pursuit of adaptive urban planning provides city planners with a feasible route to turn their visions of an economically thriving and environmentally conscious city into a reality. This entails various urban development projects for the city to transform their negligence in both environmental and social justice components of sustainability into true public goods which benefit all residents and revitalize the Earth’s natural ecosystem.

New York City’s disposable consumer culture has necessitated the use of landfills; however, landfills occupy a large amount of space and are seen as undesirable infrastructure that degrades human happiness. The placement of landfills in New York City has been historically fought among its residents who demanded that toxic facilities be moved away from residential areas with the use of “Not in My Backyard” (NIMBY) activism. City officials tend to respond to NIMBY movements by “protect[ing] property values and reinforc[ing] the city’s social stratification” even if the changes made are unmonitored for its effects on the environment (Checker, 2011, p. 217). For nearly 50 years, Fresh Kills Landfill was the single landfill that all five boroughs of New York City depended on (CityLab, 2017). Located on the inner shores of Staten Island, the landfill accumulated nearly 150 million tons of garbage without city officials and residents realizing the irreversible damage done to the waterfront until its mandated closure. In the hope to revitalize the land, the city invested millions to cover and repurpose the landfill to become a public park (CityLab 2017). Today, the park acts as a barrier that protects the city from storm surges and provides a free, recreational space for all residents and visitors to enjoy. The history and transformation of Fresh Kills Landfill serve as a model to the world about how land that was once irrevocably altered by human activity can be guided to good health and reuse.

Available housing is another major challenge New York City officials are struggling to provide as the city’s population is expected to

reach nine million by 2030 (NYC.gov, 2011). The influx of young workers in Manhattan has caused a shortage of available housing, causing people to search in nearby boroughs and neighborhoods that house marginalized communities (Pearsall, 2010, p. 881). This widening search for housing increased city gentrification efforts which not only inflates housing prices but disrupts ethnic enclaves by displacing residents who contribute to its cultural authenticity (Kostrzewa, 2017, p. 103). The housing shortage in Manhattan has greater effects on marginalized communities, although city planners are creating affordable housing measures to try to combat the issue. To capitalize on the housing demand in Manhattan, real-estate developers seek to build “a high-end version of municipal visions of dense sustainable urbanism” by constructing apartment complexes in small plots of land that will reflect the aesthetic that wealthy apartment-hunters seek (Anguelovski et al., 2019, p. 136). Bjarke Ingels Group (BIG), an architectural company, built the apartment building ‘VIA 57 West’ which exemplifies how sustainable living can reach new heights. From its energy-efficient building systems to its strategic shape, VIA 57 West is an architectural marvel for eco-conscious living. The building also includes 36 affordably priced apartments (Mairs, 2017) in assistance to the New York City Housing and Development Corporation initiative to increase the availability of newly furnished, affordable housing for low-income residents (NYCHDC, 2020). Companies like BIG can help cities around the world better define sustainable living as they incorporate environmental, economic, and social justice aspects into their building plans.

CONCLUSION

The retrofitting of greener infrastructure is an invasive process that disproportionately impacts city communities due to its tendency to victimize neighborhoods of low socioeconomic status. City planners, who are in charge of city designs, prioritize the outward appearance of a ‘sustainable city’ in order to gain a profit rather than objectively ensuring that the city is sustainable. This cascades into reckless planning where low-earning neighborhoods are knowingly neglected while high-income neighborhoods are privileged with environmental amenities. This denies the city the ability to establish environmental justice because there are environmental amenities that not all city residents have equal access to, such as clean air, safe drinking water, climate-safe infrastructure, and representation in decision-making discourses.

Three theoretical framing concepts were analyzed in this paper, and each revealed a source of institutionalized power that dominates New York City's decision-making discourses when approving the construction of green infrastructure. The first concept of a Greenwave emphasized the influence of New York's elite clientele whom the city caters to so it may maintain its position as "a global leader" (NYC.gov, 2011). The results of this favoring have led to large-scale gentrification projects in disinvested neighborhoods and, in turn, displaced marginalized communities in an unjustified manner. The second theoretical framing concept of zoning laws provides this paper with concrete evidence of how city officials are legally able to carry out their unethical actions against marginalized communities. Zoning laws hold great power in legitimizing construction plans. However, they can be easily manipulated to support profit-centered operations which place innocent lives at risk if they are not regulated. Lastly, the third theoretical framing concept of adaptive urban planning further complicates this paper by showing how public-private partnerships are able to construct projects in New York City that achieve sustainability. Two projects were studied in this section to examine the social and environmental needs that were unmet by the city but were innovatively addressed. Economic incentives are crucial in initiating sustainable change but its value in return is magnified by the environmental and social benefits that contribute to society.

Environmental justice is often undermined in city planning because it holds little economic value in short-term gains. Establishing equity is a long-term goal which city planners have little incentive to work towards because it requires a large upfront cost to equally invest in every resident's safety against climate threats. This creates a vicious back-and-forth dialogue between rich environmentalists and relatively poor environmentalists, because they ultimately care about the same thing – the preservation of the Earth and the protection of the city. However, money is the defining difference in who will experience the full benefits of greener change. City planners are fully aware that environmental concerns are a growing trend in today's world; therefore, they capitalize on it by selling eco-conscious living to affluent members of society and use the common concern on environmental preservation as a shield in justifying their disproportionate actions in addressing climate change through city infrastructure. The scope of urban development is a vital component in discussing climate change because infrastructure has such a long lifespan and cannot be easily changed when new research is found. Therefore, the

integration of environmental justice in urban planning is a practice all cities must utilize because it evaluates the viability and success of sustainable planning before it is implemented.

REFERENCES

- Anguelovski, I., Irazabal-Zurita, C., & Connolly, J. (2019). Grabbed urban landscapes: Socio-spatial tensions in green infrastructure planning in Medellín. *International Journal of Urban and Regional Research*, 43(1), 133–156. <https://doi.org/10.1111/1468-2427.12725>
- Bautista, E., Hanhardt, E., Osorio, J. C., & Dwyer, N. (2015). New York City environmental justice alliance waterfront justice project. *Local Environment*, 20(6), 664–682. <https://doi.org/10.1080/13549839.2014.949644>
- Bliss, L. (2017). The wild comeback of New York's legendary landfill. *Citylab*. <https://www.citylab.com/solutions/2017/02/the-wild-comeback-of-new-yorks-legendary-landfill/516822/>
- Checker, M. (2011). Wiped out by the “greenwave”: Environmental gentrification and the paradoxical politics of urban sustainability. *City & Society*, 23(2), 210–229. <https://doi.org/10.1111/j.1548-744x.2011.01063.x>
- Intergovernmental Panel on Climate Change (IPCC), 2019. Special report: Special report on climate change and land. (Chapter 02: Land - Climate interactions) [online]. Available from: <https://www.ipcc.ch/srccl/chapter/chapter-2/> [Accessed 14 April 2020].
- Krellenberg, K., Welz, J., Link, F., & Barth, K. (2017). Urban vulnerability and the contribution of socio-environmental fragmentation. *Progress in Human Geography*, 41(4), 408–431. <https://doi.org/10.1177/0309132516645959>
- Kostrzewa, A. (2017). *The life and death of urban ethnic enclaves: Gentrification and ethnic fragmentation in Brooklyn's 'polish town'* (Publication No. 10253534) [Doctoral dissertation, City University of New York]. ProQuest Dissertations Publishing.
- Mairs, J. (2017). BIG's VIA 57 West offers affordable homes for less than \$1,500 a month. *Dezeen*. <https://www.dezeen.com/2017/08/22/affordable-apartments-rent-via-57-west-big-bjarke-ingels-manhattan-new-york-news/>
- New York City Economic Development Corporation, 2019. *Lower Manhattan climate resiliency study* (Full Report update March 2019). Retrieved from: https://edc.nyc/sites/default/files/filemanager/Projects/LMCR/Final_Image/Lower_Manhattan_Climate_Resilience_March_2019.pdf
- New York City Government, 2011. *A greener, greater New York* (Full Report of PlaNYC update April 2011). Retrieved from: http://www.nyc.gov/html/planyc/downloads/pdf/publications/planyc_2011_planyc_full_report.pdf
- New York City Housing Development Corporation, 2020. *Income eligibility* [online]. Available from: <http://www.nychdc.com/pages/Income-Eligibility.html> [Accessed 14 April 2020].
- Pearsall, H. (2010). From brown to green? Assessing social vulnerability to environmental gentrification in New York City. *Environment and Planning*, 28(5), 872–886. [doi:http://dx.doi.org/10.1068/c08126](http://dx.doi.org/10.1068/c08126)
- Reckien, D., & Petkova, E. (2019). Who is responsible for climate change adaptation? *Environmental Research Letters*, 14(1), 1–13. <https://doi.org/10.1088/1748-9326/aaf07a>

US Census Bureau, 2018. *New York city, New York, Quickfacts* [online]. Available from: <https://www.census.gov/quickfacts/newyorkcitynewyork> [Accessed 13 April 2020].

Zenghelis, D. (2016). Decarbonisation: Innovation and the economics of climate change. In M. Jacobs & M. Mazzucato (Eds.), *Rethinking capitalism: economics and policy for sustainable and inclusive growth* (pp. 172-190). Hoboken, NJ: Wiley-Blackwell.

Gabriella DeGregorio

The Risk of Risk Assessment Programs within the American Criminal Justice System

ABSTRACT

Risk assessment programs in the American criminal justice system pose violations to the Due Process Clause of the Fifth and Fourteenth Amendments of the Constitution. These programs are used to calculate the likelihood of recidivism in criminal offenders by means of a numerical value, a score, the value of which can be used by judges to recommend sentencing for said offenders. This paper examines the constitutionality of using such programs without providing the court explicit access to the source code of said programs. It will explore the phenomenon of automation bias and examine how risk assessment programs allow discrimination toward minorities and towards the poor as a result of this source code secrecy. Risk assessment algorithms are beneficial in distributing resources amongst high and low risk offenders and could be used to decrease imprisonment in the United States by focusing on high risk offenders rather than.... However, the source code that determines the result of said algorithms are inaccessible to the court and public, resulting in a lack of judicial oversight in the data used and the weight the data carries. This paper argues that this secrecy inhibits the Due Process Clause by leaving offenders without access to the materials used by the program to cast judgment on them. Algorithms, though perceived as objective, are programmed with the opinions of humans. The concealment of source codes can conceal code-imbedded discrimination against the poor and minorities. An assessment score, which may be subject to the bias of the programmer, can also bias a judge or jury of one's peers, resulting in automation bias. This paper concludes that the usage of algorithms without accessible source codes in the courtroom is in violation of the Due Process Clause and is thus unconstitutional.

INTRODUCTION

In the words of German philosopher Hannah Arendt, “The extreme form of power is All against One, the extreme form of violence is One Against All. And this latter is never possible without instruments”

(Arendt 141). In the system of criminal justice, these “instruments” are algorithms. Since the development of algorithmic programs in the 1980s that determine an individual’s risk of recidivism, or their likelihood of committing another crime, algorithms have been integrated into the American criminal justice system. Police officers and prosecutors use these instruments to improve and quantify the determination of justice. According to Enlightenment philosopher David Hume, in order to provide justice, “[man] must institute some persons, under the appellation of magistrates, whose peculiar office it is, to point out the decrees of equity, to punish transgressors, to correct fraud and violence, and to oblige men, however reluctant, to consult their own real and permanent interests” (Hume 21). This paper will explore the impact of instituting algorithms to act as “such persons” aiding in the administration of justice. It will specifically inspect the usage and influence of recidivism programs like the Correctional Offender Management Profiling for Alternative Sanctions (COMPAS) and the crime predicting program, PredPol. Referencing the cases *State v. Skaff*, *State v. Loomis* and *People v. Chubbs*, this paper will also examine *black-box algorithms*, or algorithms whose code is not known to the public, and their ethicality within the criminal justice system. The use of algorithms in the criminal justice system for the purpose of determining recidivism in offenders is constitutionally questionable in part due to the hidden protections of source code that arguably infringe the Due Process clause. By failing to provide detailed information about the data used and weighed by a given model, algorithms put defendants at a disadvantage while the algorithms themselves are shielded from scrutiny for any biased calculations. In their current state, algorithms in the criminal justice system tend to encourage discriminatory and biased policing and sentencing while preventing individuals from questioning said bias.

HISTORICAL CONTEXT

In the United States, one of the earliest and most uniform assessments of recidivism risk came with the inclusion of the Probation Act of 1925, which gave U.S. district courts the authority to place offenders of the law on probation rather than sentencing them to prison. A suspension of sentence was available for those convicted of a crime that was not punishable by life imprisonment or death. The Probation Act provided district judges with the power to appoint probation officers, who would

be responsible for the supervision and communication of convicts. The probation officers would relay the convicts' behavior, which would assist the court's decision of continuing or ending the convict's probation ("Probation Act"). This provided greater flexibility for the court to rule on an offender's behavior and likelihood of recidivism.

Algorithmic models of recidivism function in a similar manner to probation officers by inputting the personal data of an offender and outputting a score with the goal of helping guide the court's decision making. The Rand Corporation, a nonprofit research organization focused on public policy solutions, designed one of the first recidivism models in the 1980s. With the intent to predict recidivism in convicts, the Rand Corporation held a series of studies which were the first instances of *selective incapacitation*, a strategy aiming to prioritize imprisoning criminals with offenses of the highest risk to society in order to conserve correctional resources (Mathiesen). In 1982, the Rand Corporation held a series of interviews in prisons from California, Texas, and Michigan, asking prisoners about their background, criminal history, and frequency of offenses. The results of the study had an insignificant rate of successful predictions but were the first attempt to assess an individual's risk of committing future crimes. Two follow-up studies from the U.S. Parole Commission, Inslaw, Inc, and the Salient Factor Score, appeared later in the 1980s and focused on chronic offenders. However, some assessments more commonly used today are the Public Safety Assessment (PSA) and COMPAS ("Common Pretrial..."). The PSA relies on a strict set of data focusing on age and previous offenses. The COMPAS measures offenders on scales for their General Recidivism Risk and Violent Recidivism Risk ("Common Pretrial"). Northpoint Inc., with the help of lead developer Doctor Tim Brennan, developed COMPAS in 1998. COMPAS uses a mixture of static data, such as criminal history, and dynamic information that changes over time, such as behavior. This information can be gained through self-reporting or interviews with the accused ("Selected Questions"). However, which specific questions the company uses or how the information is weighted in the model continues to be undisclosed.

Aside from models that predict the likelihood of an individual committing another crime, certain models are designed to predict where crime will occur. In 2013, a collaboration with UCLA and the Los Angeles Police Department resulted in the production of PredPol, a program designed to predict future hotspots for crime. This program only inputs the time, place, and type of crime and is commonly used today ("PredPol

Mission”). The two latter programs, COMPAS and Predpol, will be the focus of this paper.³

BENEFITS OF ALGORITHMS IN THE CRIMINAL JUSTICE SYSTEM

Algorithmic implementation in the criminal justice system has the potential to conserve resources and reduce bias and imprisonment. Philosopher David Hume notes that “it is impossible to keep men, faithfully and unerringly, in the paths of justice” (Hume 20), but the introduction of algorithms is meant to be a tool which encourages people to stay on the “path of justice” by offering a bias free administration of justice. In a 2017 review of the New Jersey prison system after the implementation of pretrial risk algorithms, there was a 15.8% decrease in pretrial imprisonment with no change in crimes over a period of seven months (“Nonsentenced Pretrial”). Considering that the United States imprisons more people per capita than any other country, such a decrease in imprisonment from algorithmic implementation suggests that algorithmic implementation is a positive move for criminal justice reform (Sawyer and Wagner). Aside from risk assessments lowering the number of persons imprisoned, one Pennsylvanian study found algorithms were beneficial in directing resources between high risk and low risk offenders. The study examined the effects of using a risk assessment tool to reallocate caseloads of low and high risk offenders involved with the Adult Probation and Parole Department (APPD) and found that “along with the reallocation of the agency’s resources like drug tests, [risk assessment tools] serve to maximize our impact on public safety while still maintaining the ability to confidently carry out orders of the court in a manner that is both efficient and effective” (Ahlman 14). Regarding the benefits of algorithmic implementation, researcher Dr. Michael Veale from the Law and Society of Wales and England suggests that “appropriate algorithmic decision support [could] ensure a minimal level of consistency, as well as [counteract] the behavioral biases of individual decision makers” (Veale 15). The behavioral biases Veale mentions are a form of the human error that Hume references when describing humankind’s tendency to stray from justice. However, as Veale and the APPD describe, the increases in efficiency and consistency that algorithmic implementation can provide contribute to criminal justice reform. Aleš Završnik, a researcher at the Institute of Criminology at the Faculty of Law in Ljubljana, further

expands upon the idea by adding that “automation can increase knowledge about the criminal justice system itself. If the structure of a specific judicial procedure leads to discriminatory and arbitrary outcomes, then the introduction of automated tools may improve justice” (Završnik 15). Završnik suggests that automation has the potential to decrease discrimination by highlighting the system’s ignorance. Combating ignorance and bias is a constant effort within the judicial process in the United States and, as Hume noted, within humankind. Thus, algorithmic implementation could aid in criminal justice reform by reducing the number of individuals imprisoned, increasing efficiency of resources, and illuminating current discriminatory practices.

TRADE SECRETS VS. CITIZEN RIGHTS

The Fourteenth Amendment of the Constitution ensures that “no state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any state deprive any person of life, liberty, or property, without due process of law” (U.S. Const. amend. XIV, sec. 1). I will examine the influence risk assessment tools have on the state’s ability to uphold due process of law, specifically regarding a defendant’s access to relevant information, or discovery. As per *Brady v. Maryland*, the Due Process Clause ensures that defendants have access to exculpatory evidence, or information that could contradict guilt or recommend a lesser punishment (“Brady Rule”). This section will investigate the degree to which the use of risk assessment scores with hidden source code affects the court’s ability to uphold the Due Process Clause of the Fifth and Fourteenth Amendments.

Risk assessment algorithms that are considered “*trade secrets*” carry the risk of disadvantaging defendants by... Source code has been cited as a “trade secret” since the 2015 case of *People v. Chubbs*, in which “a California Appeals Court upheld a trade secret evidentiary privilege in a criminal proceeding — for what is likely the first time in the nation’s history — to shield TrueAllele source code from disclosure to the defense” (Wexler). Allowing secrecy behind an assessment’s process complicates the process of checking the accuracy and weighting of the information used. Furthermore, it could leave courts vulnerable to automation bias, as Professor of Law and privacy expert Danielle Keats Citron cites in her paper, “Technological Due Process.” Keats Citron warns that “a hearing officer may be influenced by automation bias, and thus be less

inclined to entertain an individual's arguments, especially if the individual lacks the ability to reconstruct the entire eligibility determination as it should have occurred... Such bias, however, would not disqualify hearing officers, diminishing the value of a hearing" (Keats Citron 1283). Keats Citron specifically describes this phenomenon as the diminishment of a hearing, emphasizing that allowing such bias is a serious threat to the due process of the law. The purpose of the Fourteenth Amendment is to protect the liberty rights of an individual, but such predictive software may instead put individuals at risk of greater punishment. As New York Times contributor Tamar Lewin describes regarding *selective incapacitation*, "instead of punishing criminals for what they have done, the justice system would base punishment on a prediction of what they will do. That could mean throwing the book at a relatively harmless first offender who fits the crime-predictive profile" (Lewin). Without transparency of source code within the courtroom, predictive software like risk assessments could leave defendants vulnerable to fitting a similar crime-predictive profile. By judging an individual using secret criteria that predicts future risk for actions they may never commit, the individual is forced to defend themselves against a system that uses both their past and future against them. Philosopher Bertrand Russel stresses that "it is not altogether easy to draw the line between preventing unjust accusations and permitting just ones. What is perhaps even more important is that where public opinion is intolerant a man may be gravely damaged by the publication of something which is in no way to his real discredit" (Russel 66). The usage of risk assessment scores in the criminal justice system risks the liberty of the defendant, who is unable to defend themselves against accusations from a program--a program that is, arguably, too opaque to be distinguished from being unjust.

The classification of risk assessment source codes as "trade secrets" denies defendants access to information vital to their case, impairing their ability to defend themselves against their score. In the 2017 case of *State v. Loomis*, Eric Loomis filed a post-conviction motion regarding his COMPAS score following crimes related to a drive-by shooting in 2013 (Kaufman 1531). Loomis argued to the Wisconsin Supreme Court that without access to the source code which determined his score, "he [had] been denied information which the circuit court considered at sentencing" (Bradley 51). The Supreme Court upheld the usage of COMPAS in sentencing despite the undisclosed source code of the algorithm, acknowledging that while "the state does not dispute that the process

is secret and non-transparent... Loomis fails to show that a COMPAS assessment contains or produces inaccurate information” (“Algorithms”). While one who challenges the status quo is charged with carrying the burden of proof, a secret process makes it difficult for said challenger to do so. Another defendant Glenn Rodríguez, who had an excellent rehabilitation record yet a high COMPAS score, “had identified an error in one of the inputs for his COMPAS assessment. But without knowing the input weights, he was unable to explain the effect of this error, or persuade anyone to correct it. Instead of challenging the result, he was left to try to argue for parole despite the result” (Wexler). It is difficult to uphold a fair hearing and provide a defendant like Rodríguez with the full protections of due process of the law without proper disclosure of information. In *State v. Skaff*, following a drug charge of possession and delivery of cocaine, Richard Skaff claimed “that his constitutional right to due process was violated when the trial court refused to allow him to read his PSI (Presentence Investigation Report)” (Court of Appeals of Wisconsin). The court ruled in his favor, acknowledging that sentencing using information unavailable to the defendant prevented Skaff from receiving a fair hearing. This ruling clashes with *People v. Chubbs* by determining that withholding information from the defendant is unconstitutional. Skaff and Rodríguez’s disadvantages in the courtroom offer insight into the complications of putting a company’s rights before a citizen’s rights. Withholding source code by labeling it as a “trade secret” protects companies yet breaches the Due Process Clause guaranteed to citizens.

DISCRIMINATION AND CONSENT

Having examined the power struggle between trade secrets and citizens’ Fourteenth Amendment rights, this paper will further investigate other constitutionally questionable implications of risk assessment and crime predicting programs. How does the consideration of such programs as trade secrets affect the oversight and correction of discriminatory practices? This question amongst others regarding transparency will be explored in this section.

Despite the efficiency of algorithms, they have the potential to enhance discrimination against the poor. The crime predicting program, PredPol, allows police to map typical areas for serious crimes like murder, assault, or burglary, using data from past arrests. PredPol includes an option to feature lesser nuisance crimes—like homelessness, panhandling,

or drinking in public—on this digital crime map as well (O’Neil 86-87). Data scientist Cathy O’Neill notes how “nuisance crimes are endemic to many impoverished neighborhoods... Unfortunately, including them in the model threatens to skew the analysis... These types of low-level crimes populate their models with more and more dots, and the models send the cops back to the same neighborhoods. This creates a pernicious feedback loop” (O’Neil 86-87). O’Neil warned how this feedback loop can be translated into apparent successes for the algorithm and further the targeting of low-income areas. The strict policing of low-level crimes takes focus away from more serious or violent crimes, like assaults and murders, which tend to be more scattered rather than clustered in one area (O’Neil 86-87). Northpointe, the creator behind COMPAS, “has not shared how its calculations are made but has stated that the basis of its future crime formula includes factors such as education levels and whether a defendant has a job” (“Algorithms”). For those raised in low-income areas with under-funded schools, including education level as a factor could unfairly skew their scores and potentially result in a higher sentence. Using a defendant’s income level against them in the criminal justice system has further consequences: In Dr. Marie VanNostrand’s report on the New Jersey Jail Population, she found that “twelve percent of the entire jail population was held in custody solely due to an inability to pay \$2500 or less to secure their release pending disposition” (VanNostrand 14). By targeting low-income neighborhoods and imprisoning those who cannot pay, “we criminalize poverty, believing all the while that our tools are not only scientific but fair” (O’Neil 91). Therefore, algorithms, the modern-day instrument of justice, require accountability. Otherwise, citizens are subject to subservient roles on the basis of blind faith, without certainty of how they are being governed. Arendt notes that the foundation of a republic society was considered “obedience to laws instead of men; but what they actually meant was support of the laws to which the citizenry had given its consent” (Arendt 139-140). Without providing the public with knowledge as to how the algorithms upholding their laws work, the citizenry is unable to give its true consent. The criminal justice system is discreetly targeting the poor and allowing an algorithmic feedback loop to waste resources on petty offenses, rather than more dangerous offenders, and forcing citizens to consent to these unknown “acts of justice.”

The lack of transparency behind models can weaken the accuracy and accountability of the model. This can be demonstrated through black box models and protections labeling them as “trade secrets.” While the

title “trade secrets” prevents access to the original source code, black box algorithms refer to models that are uninterpretable to humans beyond its inputs and outputs, making their process impossible to understand even when accessible (Montgomery). However, Duke University Professor and computer scientist Cynthia Rudin describes the importance and dependability of interpretable algorithms by noting how “more interpretable models often become more (and not less) accurate” (Radin and Rudin). An understandable model is more accessible to review and check for errors, which is beneficial for both the creator and the parties affected by the model. When algorithms are designed to not only be efficient for the public but also understood by them, it is much easier to check the algorithm’s power. Just as Arendt emphasizes the need for consent to laws, the duty of those creating the programs is to create models to which the public can knowingly give their consent. Such checks to the system are important, as Stanford Professor Angèle Christin revealed in her research that included interviewing and shadowing twenty-two members of personnel involved in the criminal justice system. Her findings suggest that “probation officers were found to manipulate the variables they entered in risk-assessment tools in order to obtain the score that they thought was adequate for a given defendant, a process [called] ‘criteria tinkering’” (Christin 9). This “criteria tinkering” enables the very bias and unfairness that algorithms were designed to inhibit. However, with transparency, bias can be detected and corrected. Historian and philosopher Bertrand Russel warns that “those who enjoy irresponsible power will inevitably further, if not their own pecuniary interests, at least their own creed and their own prejudices. In fact, it will only be for exceptional periods that a group in power will abstain from enriching itself at the expense of the powerless” (Russel 64). Just as Hume describes mankind’s inability to keep to the path of justice, Russel emphasizes the role that prejudice can play in inhibiting justice and targeting the vulnerable. In the same way, the irresponsible power of algorithms and the recidivism scores they provide have the potential to encroach on the rights of the powerless when left unchecked.

The concealment of risk assessment source codes has the potential to also conceal discriminatory actions. Professor Cynthia Rudin remarks that “the belief that accuracy must be sacrificed for interpretability is inaccurate. It has allowed companies to market and sell proprietary or complicated black box models for high-stakes decisions when very simple interpretable models exist for the same tasks” (Radin & Rudin). Interpre-

table models could be easier to check for error, especially in situations where risk is high. While companies may advocate for the protection of source code as a trade secret or opt for black box models, this approach can be more vulnerable to error and hide discriminatory practices. As the non-profit investigative journalism organization ProPublica found in their analysis of COMPAS, “black defendants were often predicted to be at a higher risk of recidivism than they actually were. Our analysis found that black defendants who did not recidivate over a two-year period were nearly twice as likely to be misclassified as higher risk compared to their white counterparts (45 percent vs. 23 percent)” (Larson et al.). This misclassification would be crucial information in the courtroom, whereas concealing this information leaves individuals victim to a discriminatory system. The Pretrial Justice Institute (PJI) made a statement in early 2020 regarding discrimination in criminal justice algorithms, saying “we now see that pretrial risk assessment tools... are derived from data reflecting structural racism and institutional inequity that impact our court and law enforcement policies and practices. Use of that data then deepens the inequity” (“Updated Position”). Similar to the PJI’s acknowledgment of the bias that comes with risk assessment algorithms, the Advancing Pretrial Policy and Research (APPR) behind the Public Safety Assessment also released a statement noting that “assessments, including the Public Safety Assessment, can play a positive role in a jurisdiction’s pretrial system. However, implementing an assessment alone cannot and will not result in the pretrial justice goals we seek to achieve” (Carter and Shames). The APPR is not wrong in acknowledging the positive effects of algorithms, yet even they acknowledge that assessments can be insufficient in adequately delivering justice. Allowing source code to remain secret enables discriminatory practices to go undetected and, in turn, detracts from the positive aspects that algorithmic implementation offers.

CONCLUSION

When the algorithm’s source code is concealed in and out of the courtroom, risk assessment and crime predicting programs can violate the Due Process Clause and can result in the discrimination of the poor and of African Americans. As technology advances and algorithms continue to become a part of the twenty-first century, the criminal justice system must advance with this development. Likewise, citizens must remain engaged to ensure the protections of their rights. Like with any

part of government, checks and balances are required. The classification of criminal justice models' source codes as "trade secrets" from *People v. Chubbs* can impede on an individual's right to due process of the law. As *State v. Skaff* and *State v. Loomis* highlight, hidden information inhibits an individual's ability to defend themselves. The work of data scientist Cathy O'Neil points to opaque algorithms as a contributor to discriminatory sentencing and policing of the poor and minorities. As the rest of the world continues to digitize systems of government to maximize efficiency, it is important to set a precedent of skepticism and transparency, for as O'Neil reminds, "models are opinions embedded in mathematics" (O'Neil 21).

APPENDIX

Fourteenth Amendment rights – Regarding this paper, I will specifically focus on this Amendment's protection of the right to due process of the law. This clause is also protected in the Fifth Amendment.

Algorithm – a sequence of instructions that a computer follows. Using O'Neil's work, I will examine the power that algorithms can potentially hold and describe common algorithms used in the criminal justice system.

Automation Bias – the phenomenon of human bias towards an algorithm's decision over a human's testimony.

Brady v. Maryland – 1963, U.S. Supreme Court. John Brady and co-conspirator Charles Boblit were found guilty of first degree murder and sentenced to death after they both participated in a robbery. Brady maintained that although he was involved in the robbery, Boblit committed the murder. The prosecution had a statement with Boblit's confession to the murder which was not given to Brady's defense team. The Supreme Court later ruled in Brady's favor that his right to due process was violated and mandated that exculpatory evidence must be shared with the defense ("Brady v. Maryland").

Black box algorithms – describes algorithms that cannot be understood or dissected by humans, as compared to "glass box" algorithms. I will examine the Constitutionality and ethicality of such programs within the criminal justice system with reference to Hannah Arendt. See Rudin's work below for further reading.

People v. Chubbs – 2015, Court of Appeals of California. In 2011, a forensics agency took DNA from 1971 murder victim Shelley H. and found that the DNA matched Martell Chubbs. Chubbs filed a motion to reveal the source code for the algorithm used to link his DNA to that discovered from Shelley H. under the reasoning that it was necessary for his defense. The government of California filed a motion on behalf of the developer of the software to protect the source code as a trade secret. The court ultimately ruled the source code be deemed a trade secret.

Criteria-tinkering – the process of altering the input criteria of a risk assessment algorithm with the intent to change the output score to match a probation officer's opinion of an offender's risk.

Recidivism – the likelihood that an individual who has previously been convicted of a crime will commit another offense.

Selective incapacitation – a strategy that focuses on imprisoning high-risk criminals over lesser criminals in order to conserve correctional resources and more efficiently protect society.

State v. Loomis – 2017, Wisconsin Supreme Court. Eric Loomis, following charges in regards to a drive-by shooting, filed a motion arguing that by considering his COMPAS score without the source code being explicit to him, they had used information he did not have access to in sentencing. The court denied the appeal.

State v. Skaff – 1989, Court of Appeals of Wisconsin. Richard Skaff appealed a charge relating to drug offenses under the reasoning that the court failed to give Skaff access to his presentence investigation report (PSI), thereby violating his Fourteenth Amendment right to due process of the law. The court ruled in favor of this reasoning and granted him a new sentencing, but not a new hearing.

Trade secret – intellectual property which gives a company an advantage over competitors. The less people that know the secret, the more valuable it is to the company (Frankenfield).

WORKS CITED

- Ahlman, Lindsay. "The APPD Randomized Controlled Trial in Low Risk Supervision: The Effect of Low Risk Supervision on Rearrest." Adult Probation and Parole Department, First Judicial District of Pennsylvania, Oct, 2008, www.courts.phila.gov/pdf/report/APPD-Low_Risk_Internal_Evaluation.pdf
- Arendt, Hannah. *Crisis of The Republic*. New York: Harvest, 1972.
- "Brady Rule." *Legal Information Institute*. Cornell University, 2020, www.law.cornell.edu/wex/brady_rule.
- "Brady v. Maryland." *Findlaw*. Thomson Reuters, 2020, caselaw.findlaw.com/us-supreme-court/373/83.
- Bradley, Ann Walsh. "State v. Loomis: 881 N.W.2d 749 (2016)" *Leagle, Inc.* www.leagle.com/decision/inwico20160713i48.
- Carter, Madeline and Shames, Alison. "APPR Statement on Pretrial Justice and Pretrial Assessment" Advancing Pretrial Policy and Research, *Arnold Ventures*, 2020, mailchi.mp/7f49d0c94263/our-statement-on-pretrial-justice?e=a01efafabd
- Christin, Angèle. "Algorithms in Practice: Comparing Web Journalism and Criminal Justice." *Big Data & Society*, vol. 4, no. 2, SAGE Publications, July 2017, p.205395171771885-, doi:10.1177/2053951717718855.
- "Common Pretrial Risk Assessments." *Mapping Pretrial Injustice*. Movement Alliance Project, August 31, 2020, pretrialrisk.com/the-basics/common-prail/.
- Court of Appeals of Wisconsin. "State v. Skaff: 152 Wis.2d 48 (1989): wis2d481194." *Leagle, Inc.*, leagle.com/decision/1989200152wis2d481194.
- "Algorithms in the Criminal Justice System: Pre-Trial Risk Assessment Tools." *Electronic Privacy Information Center*, epic.org/algorithmic-transparency/crim-justice/.
- "Selected Questions Posed by Inquiring Agencies." *COMPAS Risk & Need Assessment System*. Northpointe, Inc. 2012, www.northpointeinc.com/files/downloads/FAQ_Document.pdf
- Hume, David. *Political Essays*, edited by Knud Haakonssen, Cambridge UK: Cambridge Univ Press, 1994.
- Frankenfield, Jake. "How Trade Secrets Work." *Investopedia*, DotDash, August 28, 2020, www.investopedia.com/terms/t/trade-secret.asp
- Kaufman, Emma. "State v. Loomis." *Harvard Law Review*, 10 Mar. 2017, harvardlawreview.org/2017/03/state-v-loomis/.
- Keats Citron, Danielle. "Technological Due Process," vol. 85, no. 6, *Washington University Law Review*, 2008, openscholarship.wustl.edu/law_lawreview/vol85/iss6/2
- Larson, Jeff, et al. "How We Analyzed the COMPAS Recidivism Algorithm." *ProPublica*, 23 May 2016, www.propublica.org/article/how-we-analyzed-the-compas-recidivism-algorithm.
- Lewin, Tamar. "Making Punishment Fit Future Crimes." *New York Times*, Nov. 14, 1982, www.nytimes.com/1982/11/14/weekinreview/making-punishment-fit-future-crimes.html.
- Montgomery, Stuart. "What's in an Algorithm? The Problem of the Black Box." *Tufts Observer*. *Tufts University*, February 25, 2019, tuftsoobserver.org/whats-in-an-algorithm-the-problem-of-the-black-box/.
- "Nonsentenced Pretrial Jail Population." Chart C, *New Jersey Courts*. July 31, 2017, www.njcourts.gov/courts/assets/criminal/cjearlyreport1.pdf
- O'Neil, Cathy. *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy*. Penguin Books, 2017.
- "PredPol Mission: About Us: Aiming to Reduce Victimization Keep Communities Safer." *PredPol*, www.predpol.com/about/.

- “Probation Act.” *Federal Judicial Center*, www.fjc.gov/history/timeline/probation-act.
- Radin, J. and Rudin, C. “Why Are We Using Black Box Models in AI When We Don’t Need To? A Lesson From An Explainable AI Competition.” *Harvard Data Science Review*, Nov. 12, 2019, doi.org/10.1162/99608f92.5a8a3a3d
- Russell, Bertrand. *Fact and Fiction*. New Introduction by John G. Slater, London, Routledge, 1994.
- Sawyer, Wendy, and Peter Wagner. “Mass Incarceration: The Whole Pie 2020.” *Prison Policy Initiative*, www.prisonpolicy.org/reports/pie2020.html#dataheader.
- Mathiesen, Thomas. “Selective incapacitation Revisited.” *Law and Human Behavior*, vol. 22, no. 4, Kluwer Academic/Plenum Publishers, Aug. 1998, pp. 455-69, [doi:10.1023/A:1025727111317](https://doi.org/10.1023/A:1025727111317).
- “Updated Position on Pretrial Risk Assessment Tools.” *Pretrial Justice Institute*, 7 Feb. 2020, www.pretrial.org/wp-content/uploads/Risk-Statement-PJI-2020.pdf.
- U.S. Constitution*. Amend. V, Sec. 1.
- U.S. Constitution*. Amend. XIV, Sec. 1.
- VanNostrand, Marie. “New Jersey Jail Population Analysis: Identifying Opportunities to Safely and Responsibly Reduce the Jail Population.” *Luminosity and the Drug Policy Alliance*, March 2013, www.drugpolicy.org/sites/default/files/New_Jersey_Jail_Population_Analysis_March_2013.pdf
- Veale, Michael. Algorithms in the Criminal Justice System. *The Law Society of England and Wales*, 2019, p. 15.
- Wexler, Rebecca. “When a Computer Program Keeps You in Jail.” *The New York Times*, 13 June 2017, www.nytimes.com/2017/06/13/opinion/how-computers-are-harming-criminal-justice.html.
- Završnik, Aleš. “Algorithmic Justice: Algorithms and Big Data in Criminal Justice Settings.” *European Journal of Criminology*, Sept. 2019, [doi:10.1177/1477370819876762](https://doi.org/10.1177/1477370819876762).

Sarah Velez

The Potential of Using Yoga as Therapy for Pediatric Psychiatric Conditions

ABSTRACT

Psychiatric conditions such as anxiety, depression, and ADHD are prominent issues for many members of society including children. When pediatric patients are diagnosed with a psychiatric condition, they are often prescribed long-term medication, which can result in harmful side-effects and financial struggles that they may face throughout their entire lives. Yoga is an active form of mind-body therapy, which could be useful in alleviating the symptoms of pediatric psychiatric conditions. Yoga also has the potential to go a step further than medication by addressing the root of a condition. This paper aims to discover the possibilities of replacing medication with yoga for children with psychiatric conditions, or combining yoga with lower doses of existing medication to form a type of complementary therapy. Using the Mindfulness to Meaning Theory and the Polyvagal Theory, as well as a variety of case studies, this paper will show how yoga has benefits that reach far beyond the capabilities of medication, and should therefore be considered as a form of therapy for pediatric psychiatric conditions.

Keywords: *Mindfulness, yoga, psychiatric conditions*

INTRODUCTION

Several studies claim that yoga, a type of mindful exercise, is therapeutic for children with psychiatric disorders. By combining stretching and balance exercises with mindfulness, yoga teaches participants to connect to their mind and body in order to relax. This paper will strive to address the following research question: To what extent is yoga a more effective method of therapy for children with psychiatric conditions than prescription medication, and how does it work to relieve the symptoms of these conditions? For the purposes of this paper, psychiatric conditions will be defined as diagnosed mental illnesses that impact daily thinking and behavior, such as anxiety, depression, or ADHD. Yoga, as a form of therapy, is a better alternative because it could drastically reduce

the amount of medication prescribed for children. Medication, especially when taken for a long period of time, can lead to many harmful side-effects, which is not optimal for children. Yoga, a healthy and natural alternative, could serve a similar purpose in terms of treatment. The balancing and stretching component of yoga makes it an active practice, as is suggested by Mary Lou Galantino et al. in “Therapeutic Effects of Yoga for Children: A Systematic Review of the Literature.” This makes yoga appealing and easily implementable into a child’s lifestyle as a form of play. The mindfulness component, presented by Kirk W. Brown et al. in “Mindfulness: Theoretical Foundations and Evidence for Its Salutary Effects” can teach children relaxation techniques that will be useful throughout their lives. With these articles as a theoretical framework, this paper argues that doctors rely too heavily on prescribing medication after diagnosing a child with a psychiatric condition. Prescription medication only targets specific symptoms and may have negative side effects. Yoga, however, can have therapeutic long-lasting effects because it enhances self-awareness and resilience through mindfulness and uncovers and addresses the deeper origin of a condition, rather than superficially treating symptoms. In this way, yoga may improve many areas of a child’s life, ranging from school to family relationships, by teaching the child ways to cope naturally.

This paper will analyze the arguments of Kirk W. Brown et al., Eric L. Garland et al., Ina Stephens, and Marlysa Sullivan et al., and more as they examine the idea of yoga as a form of therapy for children with psychiatric conditions. The first section, titled “The Practice of Mindfulness Through Yoga,” defines the term mindfulness as a relaxation method which can be useful in yoga. This section also introduces the Mindfulness to Meaning Theory, which helps explain how mindfulness can be used to increase one’s awareness in order to reduce stress. The next section is titled “The Practice of Yoga and Uncovering the Cause.” This section introduces the Polyvagal Theory, which helps explain how yoga helps people understand their suffering in order to find alleviation. The third section, titled “Medication and Complementary Therapy,” analyzes a counterargument which introduces the idea of combining medication with yoga to create a complementary therapy. Using each of these theoretical frameworks and case studies, this paper will demonstrate how yoga can be used as an effective form of therapy for children with psychiatric disorders.

THE PRACTICE OF MINDFULNESS THROUGH YOGA

Mindfulness is a vital component of yoga because it is restorative and helps patients learn to connect their mind and body. Kirk W. Brown et al. introduce the term mindfulness as such: “The term mindfulness derives from the Pali language word *sati* meaning “to remember” but as a mode of consciousness it commonly signifies presence of mind. We have formally defined mindfulness as a *receptive attention to and awareness of present events and experience*,” (212). According to this origin, the practice of mindfulness is based on an openness to remembering and recognizing the past, especially parts that may be troubling. While this act of remembering can be traumatic for individuals who have suffered, it helps them pay mind to their feelings. However, through the use of the word “presence,” Brown et al. emphasize that in order to practice mindfulness, people must be mentally present and able to recognize their inner emotions. Therefore, by being mentally present, people are able to be receptive and aware of the events occurring in their lives, and they will therefore be able to acknowledge the events that are making them anxious. In its entirety, the idea of mindfulness requires an emotional recognition of inner thoughts, which is generally a restorative experience.

By providing opportunities to reframe negative thoughts, as well as attend to positive ones, mindfulness in yoga is instrumental to the process elucidated by the Mindfulness to Meaning Theory. Eric L. Garland et al. explore this theory in “The Mindfulness-to-Meaning Theory: Extensions, Applications, and Challenges at the Attention–Appraisal–Emotion Interface.” Garland et al. use the term mindfulness to define the Mindfulness to Meaning Theory (MMT):

...the MMT asserts that mindfulness allows one to decenter from stress appraisals into a metacognitive state of awareness, resulting in broadened attention to novel information that accommodates a reappraisal of life circumstances. This reappraisal is then enriched when one savors positive features of the socioenvironmental context, subsequently motivating values-driven behavior and ultimately engendering eudaimonic meaning in life. (377)

It is significant that Garland et al. state that practicing mindfulness allows individuals to “decenter from stress appraisals.” Stress appraisal is when anxious individuals continually re-evaluate a stressful event,

so much so that they eventually remove themselves completely from the original stressor and begin to impose stress on themselves by thinking irrationally (Garland 377). Mindfulness allows people to distance themselves from this disorganized state of mind and move towards a “metacognitive state of awareness,” in which they can assess the stressful situation as a whole and be aware of their emotions and triggers. Through this practice, individuals will eventually be able to clear their mind of triggering or irrational thoughts and find “eudaimonic meaning in life” (377), which is a state of overall well-being and purpose. Eventually, mindfulness helps people gain new understandings of their thoughts and emotions so that they can have clearer mental states. Thus, the practice of mindfulness in yoga helps individuals rediscover meaning in life, thereby encompassing the Mindfulness to Meaning Theory.

The ideas that the Mindfulness to Meaning Theory presents about mindfulness itself are crucial to understanding how the use of yoga as therapy helps to increase individual self-awareness and to treat the origins of psychiatric disorders. Ina Stephens highlights the connection between mindfulness and yoga in her article “Medical Yoga Therapy.” According to Stephens, “The mindfulness and meditation aspects of yoga are ways of training the mind so that one is not distracted and caught up in its endless churning thought stream. These practices build resilience, help the patient cope with stress, and manage potential triggers for anxiety. They can also promote self-reflection that may uncover the source(s) of one’s anxiety” (2). According to Stephens, mindfulness is used in yoga to “train the mind,” which shows that it is a progressive way of teaching and shaping the mind. Through this learning process, one learns to not be “distracted” or caught in a “thought stream.” This focus is significant because children diagnosed with psychiatric disorders often struggle with distractions and racing thoughts. Undistracted, these children will be able to devote their attention to more worthy things, such as school and friends. Therefore, practicing mindfulness through yoga could help these children to learn to control their mind by building resilience. Furthermore, by building resilience, children are able to develop skills which will help them overcome difficulties in the future. This resilience will enable children to reflect on their thoughts enough to understand them and then overcome them. The reflection may be troubling at first, but will ultimately help them move past these thoughts. With the ability to navigate their mind and thoughts in this way, children can better handle their “triggers for anxiety.” This shows how this gradual learning will benefit

individuals in the long term as their triggers evolve, since they will have the skills to effectively cope on their own. For these reasons, mindfulness through yoga is capable of treating the causes of psychiatric conditions, rather than just treating symptoms.

The effects that yoga has on the mindfulness of students is evident in a study conducted by Galantino et al. In this case study, Galantino et al. looked at the overarching effects of yoga on elementary school students. The students in Galantino's study all had examination anxiety, which is not typically considered a psychiatric condition. However, examination anxiety is a form of situational anxiety, and therefore is a psychiatric disorder, despite it not being as severe as generalized anxiety. For this reason, the results from this study can be generalized to children with psychiatric disorders such as anxiety, depression, or ADHD. Galantino et al. conclude that "Postintervention, the participants transferred the learned breathing techniques and self-instructions to situations beyond school to promote healthy stress management and stress prevention," (75). These children began yoga because of examination anxiety, but were able to apply their skills from yoga to "situations beyond school," which will help them to deal with anxiety in their everyday lives and in the future. This experiment shows that yoga can be a long-term solution and confirms the way yoga addresses the root of an issue, rather than just covering symptoms. Both Stephens and Galantino et al. agree that yoga as a form of therapy serves as a learning experience. The mindfulness aspect of yoga teaches children crucial skills, such as control and resilience, so they can navigate their conditions in their everyday lives and the future. Rather than merely addressing symptoms, the mindfulness of yoga teaches children to adapt their minds so that they can navigate various situations and stressors. Therefore, the mindfulness skills learned in yoga can be adapted and used in any stressful situation.

THE PRACTICE OF YOGA AND UNCOVERING THE CAUSE OF PSYCHIATRIC CONDITIONS

The mental component of yoga deals with mindfulness, as is explored in the previous section regarding the Mindfulness to Meaning Theory. However, the practice of yoga actually consists of two main components: the mental and the physical. The physical component deals with active motor skills, such as balance, coordination, and strength. Although people often think of it simply relaxing, yoga is active and physically

demanding because it “fosters relaxation and breathing in a very active way, enabling children to channel their energy into goal-driven tasks” (Galantino 71). According to Galantino et al., yoga promotes relaxation in an “active way,” meaning that it is an engaging activity, in terms of both the mind and body. Yoga requires individuals to be actively aware of their surroundings and their inner thoughts, making them more attuned to both the outside world and their inner thoughts.. In addition, yoga is physically active because it requires that participants test their strength, motor coordination, and flexibility in a variety of poses. Both the engagement of the mind and the body makes yoga appealing to children. It is important that children are able to adapt to pediatric therapy methods. Since yoga requires flexibility and movement, children can easily equate it to play and learn to enjoy the practice. Through this activity, children are able to “channel their energy into goal-driven tasks,” which is a natural way to redirect the attention of children. Unlike medication, which suppresses the extra energy of a child with psychiatric conditions, yoga teaches these children to control their energy and put it to good use. Paul Lehrer et al. further explores the perception of yoga as an active activity in *Principles and Practices of Stress Management*. According to Lehrer et al., “Through its incorporation of multiple practices, including physical exercise, breathing regulation, and meditation, yoga is perhaps the most comprehensive approach in mind-body medicine, and therefore it is an ideal stress management intervention” (458). By stating that yoga includes “physical exercise,” Lehrer et al. confirm that it is an active form of therapy. Lehrer et al. also address “breathing regulation,” which is also discussed by Galantino et al., stating that breathing techniques are an integral part of the practice of yoga. Exercise and breathing techniques make up the physical component of yoga, while “meditation” makes up the mental component. With each of these components working together, yoga is considered a “comprehensive approach in mind-body medicine.” Since they will be able to move around and stretch their bodies, children are likely to be willing to participate in yoga because it is like a form of play. Therefore, using yoga as a comprehensive approach that addresses both physical and mental components and can be equated to play would be especially effective in alleviating the symptoms of psychiatric conditions in children. The many areas yoga addresses without being too demanding on a child’s routine makes it even more effective than other forms of treatment, such as medication.

In addition to alleviating the symptoms of psychiatric conditions,

yoga may be used in therapy sessions to uncover the root of a psychiatric disorder. Stephens discusses the way yoga works to help people understand the origin of their conditions when he claims that “Yoga helps one to reconnect with oneself. It can help to uncover why and how one’s illness may have started, and can work with the body to start the recovery period from the ground up. The practice can help one to see how they may be reacting to the world around them, and may help them learn to respond from a different perspective” (14). Stephens explains that medical yoga as a form of therapy can help one recover from psychiatric illnesses. Through the practice of mindfulness, yoga “helps one to reconnect with oneself,” which is an integral part of the Mindfulness to Meaning Theory. In order to find relief from symptoms, one must find a way to connect their body to their mind and thoughts. This process will also lead to more control and awareness of thoughts. The physical component of yoga increases awareness by redirecting the energy of negative thoughts into exercise, and the mental component increases awareness through reflection on inner thoughts through mindfulness, without distraction from the outside world. Therefore, the physical and mental components of yoga allow people to reconnect with and understand their thoughts. The understanding of thoughts helps individuals to identify the source of their illnesses and the understanding of their feelings can help them control their emotions in the future.

Unlike yoga and mindfulness, medication does not uncover the root of the issue, but instead superficially treats a patient’s symptoms. Yoga is extremely beneficial in comparison to prescription medication because it starts the “recovery period from the ground up.” Medication, which focuses primarily on treating surface level symptoms, only helps one recover in a top down way. This method may never reach the root of the condition. Yoga allows for the identification of inner thoughts through deep reflection, while stretching and meditation allow the participant to work through these thoughts peacefully. Reconnection through yoga also gives patients a “different perspective,” allowing them to see how they are “reacting to the world around them” (Stephens 14), and giving them the chance to change their thoughts and actions accordingly. This process will heal one’s mental state and then eventually relieve physical symptoms. The way yoga connects the mind and body to facilitate recovery is further explained in the Polyvagal Theory, discussed by Sullivan et al. in “Yoga Therapy and Polyvagal Theory: The Convergence of Traditional Wisdom and Contemporary Neuroscience for Self-Regulation and

Resilience (Report).” The vagal nerve is a cranial nerve which is part of the parasympathetic nervous system. This nerve controls mood and heart rate, among other things. Researchers have linked low vagal regulation to maladaptive self-awareness and emotional regulation. However, the Polyvagal Theory claims that yoga can be used to increase vagal regulation (Sullivan 4). Increasing vagal regulation through the physical and mental components of yoga could relieve symptoms of psychiatric conditions that may stem from one’s inability to regulate his or her emotions effectively. Sullivan et al. refer to the “three gunas,” which are characteristics and qualities of nature that can be reached through yoga, adding that “The apprehension and discernment of these three gunas is key to the realization of the difference between purusha and prakriti; thereby offering insight into the causes of suffering as well as its alleviation” (7). Through the practice of yoga, these three gunas may “offe[r] insight into the causes of suffering,” as they allow an individual to reconnect their thoughts with nature. This practice can be very calming, and people may feel their minds clear and their stressors fade as they stretch their bodies and practice mindful meditation. With newly clear minds, practitioners can better identify the specific factors that are causing them to feel anxious or depressed. Once individuals are able to identify what is causing them suffering, the next step in their journey is “alleviation.” In this part of the journey, individuals use their heightened self-understanding to focus on their personal triggers and relief. Therefore, according to both the Polyvagal Theory and the Mindfulness to Meaning Theory, yoga provides one insight into the root of their condition. Although the process can feel traumatic, clearing one’s mind enough to discover the source of personal trouble is an integral step in healing. Thus, the research displayed by Stephens and Sullivan et al. point to the conclusion that yoga can have a more profound impact than prescription medication. By not only alleviating surface level symptoms, but addressing the cause of the condition, yoga has the potential to be a much more restorative and healing practice for children with psychiatric conditions.

MEDICATION AND COMPLEMENTARY THERAPY

Therapeutic yoga is a potential alternative to the medication prescribed to children with psychiatric disorders. In cases where yoga might not be able to serve as a replacement to traditional medication, it is promising as a complementary form of therapy. Many parents and doc-

tors still turn to medication because it has been scientifically proven to relieve symptoms. In “Worried no more: The effects of medication status on treatment response to a CBT group for children with anxiety in a community setting,” Julie A. Eichstedt et al. discuss the use of medication for children. She writes that there are “no differences in anxiety change scores from pre- to post-treatment for those children with a medication increase versus those on a stable dose during GCBT. Families may have sought medication increases to manage symptom exacerbations rather than relying on CBT [Cognitive-Behavioral Therapy] strategies due to their past experience with SSRI medications” (274). According to Eichsdedt et al., some parents during the study increased the number of SSRIs, or Selective Serotonin Reuptake Inhibitors, given to their child in order to treat anxiety symptoms. Doctors prescribe “SSRI medications,” which are antidepressants, for anxiety and depression. However, analysis shows that there were “no differences in anxiety change scores” when the children received higher doses of SSRIs..

Because parents are more familiar with the success of SSRI medication, they fail to consider the possible benefits of cognitive behavioral therapy strategies, such as yoga therapy, for their children. Therefore, medication is highly regarded by families as the best choice for children with anxiety. This could be due to the fact that some families actually do see a certain degree of success using medication and are therefore not interested in trying group cognitive behavioral therapy. This perspective is challenged in Chandra Nanthakumar’s study “The Benefits of Yoga in Children,” which suggests that medication is not necessary for every situation. Nanthakumar claims that “if the awareness of the benefits of yoga can be spread to a larger population, children may not need to depend on medication whenever they are stressed. Instead of heading to a clinic for every stress or anxiety attack, these children may opt for yoga” (18). With this statement, Nanthakumar implies that medication may currently be overprescribed, as it is used for even minor anxiety. She believes that if therapists begin relying on yoga, children could reduce their dependence on medication because they will be able to use yoga to calm themselves down (Nanthakumar 18). Yoga is a natural alternative to medication and can serve the same purpose of relieving the anxiety a child feels. Although more severe cases may still require medication, overall, the incorporation of yoga will help to reduce the amount of medication a child needs.

The method of pairing traditional medication with yoga therapy is called complementary mind-body therapy. Complementary mind-body therapy is the idea that yoga as a type of therapy may make other forms of treatment, such as medication, more effective when the two are used together. The benefits of complementary mind-body therapy in relation to yoga are discussed by Kaley-Isley et al. in “Yoga as a Complementary Therapy for Children and Adolescents: a Guide for Clinicians.” Kaley-Isley and her team studied children with varying physical and mental conditions, including anxiety and ADHD. Researchers assigned children who were already on medication to a yoga class and assessed their conditions before and after the class. To observe the effects of taking the yoga class, researchers did not alter the medication of the participants. According to Kaley-Isley et al., the three studies which evaluated yoga as a way to reduce stress and improve coping abilities showed mixed results. She writes that one study “demonstrated a decrease in anxiety and increase in positive affect, one [study] found no decrease in anxiety but an increase in self efficacy, and the third reported a decrease in negative affect and stress, but no increase in positive affect” (29). While the study “yielded mixed results,” each of these results shows a positive impact. Even when the therapy did not directly decrease anxiety, it did increase “self-efficacy,” meaning yoga improved the way the children believed in themselves. This is a positive result. Therefore, in each of these instances, combining yoga with already existing medication improved the condition of the children.

Combining yoga and prescription medication to create a complementary therapy treatment is becoming more widespread, primarily for those with psychiatric conditions. Ronald C. Kessler et al. present additional evidence for the success of complementary therapy in “The Use of Complementary and Alternative Therapies to Treat Anxiety and Depression in the United States.” According to Kessler et al., “evidence exists from two controlled trials showing positive effects of relaxation (the complementary and alternative therapy most commonly used to treat anxiety and depression) and meditation on the reduction of depression and from one controlled trial showing positive effects of relaxation on the reduction of anxiety,” (292). As stated by Kessler et al., “relaxation...and meditation,” which are both components of yoga, are commonly used as complementary therapy to treat psychiatric disorders. Therefore, according to the findings of both Kaley-Isley et al. and Kessler et al., complementary therapy is an effective way to reduce the symptoms of psychiatric

disorders, such as anxiety, depression, and ADHD. However, this therapy can also have additional positive effects, such as increasing childrens' self-confidence. This combination of medication with yoga could be useful in more severe cases in which medication is still necessary. By using complementary therapy, families could reduce the dosage of medication while still effectively treating psychiatric conditions. This approach will reduce the harmful side-effects of medication while also saving parents money. since it involves less medication.

CONCLUSION

This paper argues that children with psychiatric conditions are overprescribed medication. Medications are expensive, only target specific symptoms, and can produce harmful side effects. Medical yoga has the ability to relieve the symptoms of psychiatric disorders, just as medication would and go one step further. The Mindfulness to Meaning Theory demonstrates that yoga increases one's awareness of his own body, while also enhancing the connection between the mind and body. In this way, yoga works to help the patient regain control over his thoughts, which is the first step on the road to relieving symptoms of anxiety, depression, and ADHD. Unlike medication, yoga also works to address the causes of one's condition. As stated by the Polyvagal Theory, yoga offers one insight regarding why they are suffering by establishing a mind-body connection. This connection gives patients control over both their mind and body, which they often miss when facing mental health struggles. With this newfound control, patients are able to find out what is really causing them to suffer, and work to fix the problem at its root which leads to the alleviation of symptoms. For these reasons, yoga as a form of therapy has the potential to be even more effective than medication alone. Although this paper does recognize that there certainly are severe cases which will always require some form of medication, many of these cases would benefit from the addition of yoga to their existing medication. This combination of yoga and medication, known as complementary therapy, might relax the thoughts and mind of patients enough to allow their doctors to lower the dosage of their medication.

Understanding how yoga can serve as a form of therapy for children with psychiatric conditions makes it possible to treat these conditions in a much more meaningful way. Yoga, through its mental and physical components, has the ability to teach resilience and improve

self-efficacy, as well as teach relaxation techniques which may be useful to children all throughout their lives. By teaching these skills through active movement, yoga becomes comparable to play for children and is therefore easily implemented into their routines. In this way, yoga has the potential to reach far beyond the abilities of traditional treatment plans in order to improve patients' overall quality of life.

REFERENCES

- Brown, Kirk Warren, et al. "Mindfulness: Theoretical Foundations and Evidence for Its Salutary Effects." *Psychological Inquiry*, vol. 18, no. 4, Taylor & Francis Group, Oct. 2007, pp. 211–37, doi:10.1080/10478400701598298.
- Eichstedt, Julie A., et al. "Worried No More: The Effects of Medication Status on Treatment Response to a CBT Group for Children with Anxiety in a Community Setting." *Clinical Child Psychology and Psychiatry*, vol. 16, no. 2, SAGE Publications, Apr. 2011, pp. 265–77, doi:10.1177/1359104510366282.
- Galantino, Mary Lou, et al. "Therapeutic Effects of Yoga for Children: A Systematic Review of the Literature." *Pediatric Physical Therapy*, vol. 20, no. 1, 2008, pp. 66–80., doi:10.1097/pep.0b013e31815f1208.
- Garland, Eric L., et al. "The Mindfulness-to-Meaning Theory: Extensions, Applications, and Challenges at the Attention-Appraisal-Emotion Interface." *Psychological Inquiry*, vol. 26, no. 4, Routledge, Oct. 2015, pp. 377–87, doi:10.1080/1047840X.2015.1092493.
- Kaley-Isley, Lisa C., et al. "Yoga as a Complementary Therapy for Children and Adolescents: a Guide for Clinicians." *Psychiatry* (Edgmont (Pa. : Township)), vol. 7, no. 8, Aug. 2010, pp. 20–32, <http://search.proquest.com/docview/755968976/>.
- Kessler, Ronald C., et al. "The Use of Complementary and Alternative Therapies to Treat Anxiety and Depression in the United States." *American Journal of Psychiatry*, vol. 158, no. 2, American Psychiatric Publishing, Feb. 2001, pp. 289–94, doi:10.1176/appi.ajp.158.2.289.
- Lehrer, Paul M., et al. *Principles and Practice of Stress Management*. 3rd ed., Guilford Press, 2007.
- Nanthakumar, Chandra. "The Benefits of Yoga in Children." *Journal of Integrative Medicine*, vol. 16, no. 1, Elsevier B.V, Jan. 2018, pp. 14–19, doi:10.1016/j.joim.2017.12.008.
- Stephens, Ina. "Medical Yoga Therapy." MDPI, *Multidisciplinary Digital Publishing Institute*, 10 Feb. 2017, www.mdpi.com/2227-9067/4/2/12.
- Sullivan, Marlysa B., et al. "Yoga Therapy and Polyvagal Theory: The Convergence of Traditional Wisdom and Contemporary Neuroscience for Self-Regulation and Resilience (Report)." *Frontiers in Human Neuroscience*, vol. 12, Frontiers Research Foundation, Feb. 2018, p. 67, doi:10.3389/fnhum.2018.00067.

Reshma Krishnaraj

The Effect of Racial and Ethnic Disparities on Maternal Mortality and Morbidity Rates

INTRODUCTION

In April 2016, Kira Johnson, aged thirty-nine years, delivered a son, Langston, in a routine Caesarean section at Cedars-Sinai Medical Center in Los Angeles, California. Ten hours later, she was dead. Her husband, who is currently suing the doctor and hospital, claims that her health condition and pain were ignored for hours on end, until it was too late (Johnson, Drechsler 2020). When doctors eventually opened her up, they found three liters of blood in her abdomen and her heart failed instantly. Kira being African-American is no coincidence; Black women in the US have the highest maternal mortality rates when compared to all other ethnic groups. This is attributed not only to a disbelief of Black pain, but to a systemic invisibility minorities face which prevents adequate obstetrical care from being provided or even offered.

Amongst developed countries, the United States has the highest maternal mortality rate at 26.4 deaths per 100,000 compared to 9.2, 7.8, and 7.3 in the UK, France, and Canada respectively (Martin, Montagne 2017). For a country with the amount of money and resources it has, the United States routinely struggles to provide healthcare to vulnerable and low-income populations. Most of these populations are ethnic minorities who are stuck in a cycle of poor health due to factors such as socioeconomic status, genetic predisposition, and access to healthcare. Their circumstances reinforce their invisibility in the healthcare system; they are unable to receive care and no one is taking the initiative to help them. Several reports indicate that certain racial groups in the United States are worse off in receiving adequate prenatal and postnatal care which contributes to high mortality and morbidity rates. The disparities in pregnancy and childbirth related deaths not only affect families and communities but also place a burden on the healthcare system.

This paper will use case studies and quantitative research to examine how racial and ethnic disparities contribute to high maternal

mortality and morbidity rates. Further, this paper will explore how the disbelief of Black pain, the invisibility of minorities, the standard patient myth, and a lack of collaboration between patients and doctors influence the minority obstetrical health outcomes seen in the United States. By analyzing the data available and discussing theories presented by researchers, this paper will also investigate ways to tangibly reduce the racial disparities that persist in the healthcare system.

DEFINING OBSTETRICAL CARE IN THE UNITED STATES: OBSTACLES AND IMPLICATIONS

Obstetrical care is the care or treatment women receive before, during, and after delivery. Also known as pre/post natal care, obstetrical care plays a large role in establishing healthy practices for both mother and child. It has been found that non-Hispanic Black women have the worst obstetrical health outcomes and the highest maternal mortality rates when compared to other racial groups such as White, Hispanic, Native American, and Asian women. A national study which investigated pregnancy-related mortality among Black versus white women found that Black women “had a case-fatality rate 2.4 to 3.3 times higher than that of white women for five specific pregnancy complications including preeclampsia, eclampsia, abruptio placentae, placenta previa, and postpartum hemorrhage” (Howell 2018). This means for five major pregnancy complications, some of which are more common in white women, Black women still had higher mortality rates. The sheer difference in mortality rates between Black and white women calls to attention the idea of Black pain being ignored in the healthcare system. Healthcare providers often undermine the pain and symptoms Black women face which results in preventable Black deaths. White women have morbidity rates lower than not only Black women, but also all other ethnic minorities; “Black, Hispanic, Asian/Pacific Islander, and American Indian/Alaska Native women had 2.1, 1.3, 1.2 and 1.7 times higher rates of severe morbidity compared with white women in data from seven states” (Howell 2018). A 2018 study on delivery outcomes found that Black women had severe maternal morbidity rates of “231.1 per 10,000 versus 139.2 per 10,000 for white women” (Admon 2018). This begs two questions: why do women face such egregious differences in health outcomes and what can be done to bridge the gap between these racial and ethnic groups?

Before examining why we see such large differences in health

outcomes, it is important to note that myriad factors such as socio-demographics, age, community resources, access to care, access to transportation, genetics, cultural beliefs etc. contribute to the high maternal mortality rates observed. However, it is especially important to consider the racial and ethnic disparities that exist which influence these factors as well. If someone is stuck in a low-income neighborhood, working a minimum wage job, they are unable to break free from this cycle of poverty. This influences their access to healthcare and ability to take off from work to keep up with doctors appointments, which are vital to a healthy pregnancy. Moreover, systemic racism and ethnic discrimination keeps low-income minorities from achieving social mobility. Therefore, low-income neighborhoods are overlooked, underfunded, and the people in these communities continue to suffer.

The healthcare system often falls short in providing the necessary care for those who do not appear to be “ideal” patients. This is usually defined as a patient with insurance, transportation, financial means, and social support. The only way to rectify the glaring disparities in the system is to reassess what we accept as the standard patient and understand that many women do not fit this definition; therefore the idea of the standard patient is a myth. When we only focus on those it is easiest to treat, we overlook so many women who need care but may not have the means to pay or the education to know about the healthcare they are not receiving. A tangible way to combat the invisibility of women is through active collaboration between doctors and women who need care. Above all, this requires an environment where women feel heard along with doctors who want to understand their concerns.

The stress minorities face further contributes to the poor obstetrical health outcomes seen in the US. Experiencing racism, bias, and unjust treatment adds unnecessary stress on women and affects their psychological and physical wellbeing. Stress most directly affects the rate of preterm births in the African American population. Preterm births, births before 37 weeks, pose a dangerous risk not only to the infants born early but to the mothers themselves. Dr. Tracy Manuck, a full time researcher and physician who specializes in obstetrics and gynecology, found that “Mothers who deliver preterm are at elevated risk for serious morbidities later in life, including cardiovascular disease and stroke” (Manuck 2017). A study conducted between 2013 and 2015 found that, “more than 13 percent of African American babies were preterm, compared with about 9 percent of babies of other races” (Butler 2018). Even if women do not

die from complications like preterm birth, they may develop health issues that persist for years to come. The often fatal implications of preterm births is profound and the stress that influences it must be addressed. Numerous studies indicate that the high rate of preterm births is attributed to the racism-related stress Black women face not only in their day to day lives, but in their experiences with doctors and healthcare providers. This is where the difference between mortality and morbidity is important to note. Mortality is the risk or level of death whereas morbidity is the risk or level of poor health. This is relevant to the disparities women of color face because they often develop health conditions after delivery that last their lifetime; this would be the morbidity rate. In fact, severe maternal morbidity (SMM) is “50 to 100 times more common than maternal death” with Black women facing a “70% greater risk for SMM” after accounting for confounding factors (Liese et. al 2019). Maternal morbidity is an unfortunate byproduct of the carelessness seen in the healthcare system. Even more so, the skewed rates we see affecting Black women at a much higher rate than other ethnic groups is a testament to the disbelief of Black pain. Physicians and healthcare providers continuously underestimate the pain and experiences of Black women and the result is a higher than average morbidity rate. The chronic invisibility and lack of acknowledgment of the needs of minority women has tragic outcomes that affect women everyday. Overall, as Dr. Howell cites in her research, “severe morbidity poses an enormous risk to women’s health and well-being and similar to pregnancy-related mortality, racial and ethnic minority women have higher rates of severe maternal morbidity events” (Howell 2018). Minority women, especially Black women, have a much greater risk and incidence of mortality than white women.

In order to identify the cause of this egregious difference in birth outcomes, “Paula Braveman, a family medicine specialist at the University of California-San Francisco, asked more than 10,000 mothers a single question: ‘How often have you worried that you might be treated or judged unfairly because of your race or ethnic group?’ ” African American women who said they worried “very often” or “somewhat often” were twice as likely as other Black women to have had a premature baby” (Butler 2018). This highlights the mistreatment and lack of support minority women face in the healthcare system. When physicians do not take the time to understand the reality and experiences of the women they treat, those women will face poor health outcomes. The effects of racism and prejudice are profound and require a reform in the way minorities are

treated in the healthcare system.

In order to truly bridge the gap in obstetrical health outcomes, it is important to change the experiences Black and other minority women face to more equitable encounters. This requires doctors themselves to educate and train to meet the unique needs of women who are often overlooked. While it may be a large undertaking to combat the racism women face in day to day interactions, the last place they should feel unwelcome or misunderstood is their own doctor's visits. All women deserve the dignity and respect to have their needs met to ensure a healthy pregnancy and delivery.

THE INVISIBILITY OF MINORITIES IN THE UNITED STATES

The chronic invisibility that minority women, especially Black women, face is a predominant reason for the poor health outcomes evident in many communities. The reason why so many women fall through the cracks in the healthcare system is because their situations are entirely misunderstood and overlooked. This overlooking of millions of women fuels the invisibility that plagues predominantly low-income communities. Women are entirely neglected by the healthcare system time and time again. The problem lies not in the lack of funding for certain communities, but an entire lack of understanding of the reality of many women's lives. The idea of the standard patient is a myth because all patients are not insured, white, and knowledgeable enough to know prenatal care is necessary, or able to take time off from work to attend doctors visits. However, doctors and hospitals assume that their patients are in ideal situations and are willing, able, and possess a basic understanding of what a healthy pregnancy entails. This is the real issue because many women do not have the means - whether it be health insurance, reliable transportation, or the ability to take time off from work - to receive the health services that beget a healthy pregnancy and delivery. In order to reduce maternal mortality, there needs to be a change in the concept of the standard patient. Without this, systemic issues of health inequities will persist and vulnerable women will continue to be overlooked.

1. LACK OF HEALTH EDUCATION

A seemingly obvious factor that influences health is education and awareness of good health practices. However, for many women, this education is never provided and they are left in the dark. As mentioned

earlier, doctors assume that their patients are knowledgeable enough to know basic health practices and are willing to follow through with these practices. The error lies in assuming women have this knowledge, which is in reality a privilege many are not able to afford. In order for women to have a healthy pregnancy, they need to know enough about healthcare to even ask for prenatal care and other pregnancy related health services. As a result of the misunderstanding of patients' situations, many women may not take prenatal care services seriously or may even avoid attending such visits. In a 2009 study done on health promotion, "women report that they want more education and support during pregnancy and information about healthy lifestyles, not just healthy pregnancies" (Gennaro 2016). The issue this highlights is that women want to be educated on a healthy lifestyle, and this information is not available to most women. The healthcare systems and physicians should not assume that the average woman knows the basics about reproductive health.. Instead of assuming incorrectly, physicians should provide information so that patients are as informed as possible on their health and are able to make healthy decisions. This is an important point to remember because good health outcomes and a reduced maternal mortality rate require care to be provided before, during and after a pregnancy. Postnatal care is especially important because it determines if morbidities will arise and also determines the health of the child. True health comes from a healthy lifestyle which requires education and support along with resources available to all women, regardless of income.

2. THE ACCESSIBILITY ISSUE

Aside from the various factors that affect obstetrical health outcomes like genetics, comorbidities, and complications during delivery, social determinants play a large role in the poor health outcomes observed in minority communities. Social determinants of health are defined as the "conditions in which we are born, live, learn, work, play, worship, and age". (Gadson, Akpovi, Mehta 2017). These factors influence people's lifestyles and their access to healthcare which consequently affects their health outcomes. Studies indicate that "race, psychosocial factors, and medical comorbidities" interact with social determinants "to impact maternal outcomes such as pregnancy-related death, pregnancy-associated death, and maternal morbidity" (Gadson, Akpovi, Mehta 2017). The environment women are born into and live in directly influences the

health of their baby and themselves. Women who are low-income are often unable to attend scheduled doctor's appointments, as they lack the transportation or financial means to receive these necessary health care services. This is where access to health is impeded on and requires more than just funding to fix. The healthcare system needs to understand that simply making appointments free or low-cost will not greatly increase women's ability to access healthcare. There are a myriad of factors that contribute to a woman's ability to visit a doctor or clinic, such as transportation, babysitting for children, taking care of older family members, taking time off from work, etc. When other areas of her life prevent a woman from visiting the doctor, how can we expect a free healthcare visit to do anything for her? This requires the healthcare system to reimagine the abilities and limitations of women and use this knowledge to make care more accessible.

One particular area of egregious health disparities is prenatal care. Prenatal care is vital to the health of not only the baby but the woman as it establishes good habits such as not smoking, not drinking, eating healthy, and breastfeeding the baby. On average, Black and hispanic women start prenatal care in the second or third trimesters as opposed to the average white woman starting in the first trimester. Factors like "insurance status, availability of social support in the form of childcare and adequate housing, neighborhood, and transportation likely play some role in prenatal care utilization" (Gadson, Akpovi, Mehta 2017). A 2017 review on obstetrical care found that "continuous, personal support during delivery can improve maternal and infant outcomes, including reducing the likelihood of a cesarean delivery" (Frakt 2020). The study further found that support was an "exception rather than the routine" (Bohren 2017).

This unfortunately depicts the reality of the maternal healthcare system today, where support is not adequately provided and women are seen as numbers rather than patients. The most effective way to reduce maternal deaths and morbidity is to provide the resources and care necessary for women to have a healthy pregnancy and delivery; this requires providers to understand the reality of all women, regardless of their income.

A DOCTOR'S DUTY: ADDRESSING THE INVISIBILITY PROBLEM

Reducing the maternal mortality and morbidity rates requires collaboration between healthcare providers and patients. However, the onus is on the doctor to understand the unique situation a woman faces and provide care that most benefits them. This means physicians must understand the capabilities and limitations of women; whether it is financial or otherwise, they must recognize where they need the most support. It is essential for physicians to reimagine their ideas of the standard patient and realize that each woman's experience is unique. A large factor that influences obstetrical outcomes is the knowledge of what entails a good pregnancy. The average woman should not need to be an expert on this; it's the doctor's duty to provide all the information relevant to the woman. Far too often, healthcare providers assume that their patients are somewhat experts on their pregnancy and are well versed in how the healthcare system works. This is where many women are neglected and are met with obstacles in receiving care. It is important for healthcare providers to understand the reality women face and educate them on how to have a healthy pregnancy within the context of their own lives.

In order to reduce maternal mortality rates due to racial disparities, it is important to identify the populations that are most at risk and provide funding and social assistance. "The social significance of race is indisputable and racial disparities in maternal health have roots in inequalities in the provision of healthcare at the system level, the provider level, and the patient level" (Howell 2018). Without acknowledging the role that race plays in the delivery of healthcare, it is impossible to improve health outcomes. Our healthcare system must address the inequalities present and find a way to provide the necessary resources for women of all races and ethnicities to have a healthy and safe pregnancy. Dr. Bryant introduces the point that a lack of guidelines or regulations on obstetrical care is a significant reason for the disparities we see in health outcomes. She states, "As yet, clear quality standards for the provision of preconception, prenatal, intrapartum and postpartum care are lacking; creation of such guidelines will provide better benchmarks for quality and equality of obstetrical care" (Bryant 2010). If healthcare providers are given a set of guidelines to follow up and check up with women, then health issues can be caught and treated at an early stage and women can ensure they are receiving the necessary care.

The insurance status of women more often than not contributes to their health outcomes due to the care they receive. For those who rely on Medicaid for insurance, they find themselves lacking enough coverage to receive the necessary checkups and support that constitutes a healthy postpartum experience. Many women may receive Medicaid coverage for their pregnancy and delivery but this coverage stops after a few weeks or even days after giving birth. Increasing the duration of Medicaid coverage has favorable results in many states such as Utah where the maternal mortality rate dropped after extending women's coverage postpartum (Frakt 2020). This is just one method to improve health outcomes for women but the results are extremely beneficial.

CONCLUSION

The healthcare system needs to improve not only in the allocation of resources to low-income communities but in understanding the particular situations that Black and other minority women face which prevent their access and willingness to receive treatment. Health clinics and community resources should be increased for areas with vulnerable populations because many women do not have the ability to leave work and drive long distances to doctors appointments. Not only this, but doctors need to understand that all their patients do not have the foundation of basic health which is assumed to be common knowledge. In this country, health is often seen as a privilege when in reality it is a right to all people regardless of their demographics. In order for minority women to receive the care they need, their experiences need to be understood. A large part of understanding women's experiences is listening to their symptoms and believing their pain. It is far too common for Black women's pain to be ignored with tragic results. Why do we as a society continuously underestimate the experiences of Black women? This is a point that is seldom addressed in healthcare settings. Lastly, education is the single greatest tool that women can possess to improve their health as well as their children's health. Education on health practices requires collaboration and open conversation between healthcare providers and their patients. Women should be educated on health risks and things to look out for during pregnancy and be equipped with the knowledge to make good decisions during pregnancy. The healthcare system needs to be reimagined in the way they provide care and in the way they view their patients. If Black and other ethnic women's experiences are neglected and their

pain misunderstood, the rates of mortality and morbidity will continue to skyrocket. We as a society need to ask ourselves if this is something we are okay with.

WORKS CITED

- Admon, Lindsay, et al. "Racial and Ethnic Disparities in the Incidence of Severe Maternal Morbidity in the United States, 2012-2015." *Obstetrics & Gynecology* 132.5 (2018): 1158-1166. Journals@Ovid Full Text. Web. 22 July. 2020.
- Bohren MA, Hofmeyr GJ, Sakala C, Fukuzawa RK, Cuthbert A. Continuous support for women during childbirth. *Cochrane Database Syst Rev.* 2017;7(7):CD003766. Published 2017 Jul 6. doi:10.1002/14651858.CD003766.pub6
- Bryant, Allison S et al. "Racial/ethnic disparities in obstetric outcomes and care: prevalence and determinants." *American journal of obstetrics and gynecology* vol. 202,4 (2010): 335-43. doi:10.1016/j.ajog.2009.10.864
- Butler, Kiera. "Pregnant While Black." *Mother Jones*, vol. 43, no. 4, July 2018, pp. 13-15. EBSCOhost, search.ebscohost.com/login.aspx?direct=true&db=aph&AN=130112828&site=ehost-live.
- Frakt, A. (2020, July 13). *What's Missing in the Effort to Stop Maternal Deaths*. Retrieved July 20, 2020, from <https://www.nytimes.com/2020/07/13/upshot/maternal-deaths-policy-neglect.html>
- Gadson, A., Akpovi, E., Mehta, P.(2017, June 16) Exploring the social determinants of racial/ethnic disparities in prenatal care utilization and maternal outcome, *Seminars in Perinatology*, Volume 41, Issue 5, 2017,
- Gennaro, Susan et al. "Improving Prenatal Care for Minority Women." *MCN. The American journal of maternal child nursing* vol. 41,3 (2016): 147-53. doi:10.1097/NMC.0000000000000227
- Howell, Elizabeth A. "Reducing Disparities in Severe Maternal Morbidity and Mortality." *Clinical obstetrics and gynecology* vol. 61,2 (2018): 387-399. doi:10.1097/GRF.0000000000000349
- Johnson, C., & Drechsler, P. (2020, July 16). After His Wife Died, Man Pushing to Change Laws to Protect More Women From Pregnancy-Related Deaths. Retrieved July 21, 2020, from <https://www.nbclosangeles.com/investigations/wife-died-giving-birth-change-laws-to-protect-more-women-pregnancy-related-deaths/2395401/>
- Liese, Kylea L et al. "Racial and Ethnic Disparities in Severe Maternal Morbidity in the United States." *Journal of racial and ethnic health disparities* vol. 6,4 (2019): 790-798. doi:10.1007/s40615-019-00577-w
- Manuck, Tracy A. "Racial and ethnic differences in preterm birth: A complex, multifactorial problem." *Seminars in perinatology* vol. 41,8 (2017): 511-518. doi:10.1053/j.semperi.2017.08.010
- Martin, N. & Montagne, R. (2017, May 12). U.S. Has The Worst Rate Of Maternal Deaths In The Developed World. Retrieved July 02, 2020, from <https://www.npr.org/2017/05/12/528098789/u-s-has-the-worst-rate-of-maternal-deaths-in-the-developed-world>

Harshill Patel

Shopping for a Bargain: The Retail Outlet

ABSTRACT

Shopping malls provide shoppers with a unique experience that attracts customers from all cultures, ethnicities, ages, and socio-economic classes. Customers interact with the physical space that the mall intentionally set up to provide a sense of comfort. The decorations, advertisements, and food franchises create an atmosphere that offers incentives for customers to shop at the mall for prolonged periods. The case study for this paper is Woodbury Commons, an outlet mall situated in Upstate New York. Woodbury Commons is one of the most successful outlet malls in the United States due to the variety of brands it offers, its geographical location, and the unique design of the mall.

INTRODUCTION

Outlet malls have come into existence only recently, with the first outlet mall opening in 1979. Its primary purpose is to offer goods from brands at a much lower point. A concept that started when factories that produce branded goods, offered the damaged and old goods to their employees for a lower price than the retail stores. The concept soon transformed into outlet stores, where branded goods were offered to everyone at steep discounts. Initially, these outlet stores sold defective goods, but as demand grew, they decided to manufacture their own branded goods. These goods had the look of authentic branded goods but lacked quality and craftsmanship. The change in inventory strategy for outlet stores was examined in the study conducted by Anne Coughlan on outlet store product lines where she concluded that, "Outlet stores are now observed to offer complete lines of merchandise and their stocking procedures appear to "mimic" those of traditional retailers" (Coughlan 62). Coughlan's conclusion supports the shift in the outlet store business model from selling damaged products to curating merchandise lines that replicates the look of their higher quality retail goods. This business model shift has led to upwards of 85% of the merchandise sold in outlet stores being manufactured exclusively for these stores. The outlet stores are essentially

selling substitutes of their branded items through this strategy by exclusively manufacturing lower quality goods while cutting costs to sell at steep discounts with an identical aesthetic to their flagship retail goods. In addition to the attractive prices, the location of these malls is also crucial to their success. Most outlet malls' placement might seem "out of place" until you carefully examine their surroundings. These outlet malls are usually in rural, underdeveloped areas due to the cheap land. James Hathaway describes in his study on the phenomenon of outlet malls that, "Outlets try to be in a location that's accessible to many cities... [and] far from its full-price stores, competitors and wholesale customers, like department stores, otherwise no one would shop at the department stores" (Hathaway 3). The pattern in their geographical locations gives them their unique purpose and provide customers with cheaper opportunities. There is also a higher chance of receiving tax breaks from remote towns in addition to creating new job opportunities for the locals. For example, in this paper's case study, the Woodbury Common Premium Outlets is situated in Central Valley, a small town in Upstate New York, where it receives tax breaks from the government for creating more than 4000 jobs in the local area. Woodbury Commons is very close to various major cities, New Haven, Albany, and New York City. Due to its location, it is the only outlet mall within proximity to north New Jersey, south and central New York, and west Connecticut. Even though it is perfectly situated between three states, it is very far from any retail stores and shopping malls that could compete. Due to this geographical placement, Woodbury Commons has significantly benefited by eliminating competitors, including each outlet's retail store, resulting in customers' mass attraction to the outlets.

Woodbury Commons provides brands from every category imaginable. The brands vary from Aéropostale to Under Armour to Christian Dior, and offers apparel, sports equipment, designer goods, and house appliances. The shopping experience provided by the outlet stores determines the brand attitude: the consumer's opinion of the store based on their shopping experience. This directly dictates the customer's loyalty to the brand and the store. Brand attitude, personal service, and store organization contribute significantly to customer retention. In a study conducted by Bill Merrilees, he asked customers at two distinct locations, Canada and Estonia, how brand attitude and store location, among other variables, influence them into shopping at those stores again. The data he collected measured the correlations between the variables and con-

firmed “the hypothesis that brand attitude is a major influence of store loyalty. Location is important in both countries, as expected for this retail category” (Merrilees 219). As proven by Merrilees’s study, brand attitude dictates the customer’s loyalty to a store, but several additional factors work congruently with it, such as price and store organization. James Hathaway explores the retail landscape and places outlet malls in the context of the economic landscape through examining the outlets in Grove City of Pennsylvania, where he concluded that “with space-time convergence and retail saturation in urban areas, the industry has chosen once seemingly remote locations. Locations in the “metropolitan shadow” are now accessible to millions of customers because of expanded interstate highways and cheap fuel cost” (Hathaway 5). This shows that outlet malls were created to tap into a new market of consumers from different racial, economic, and cultural backgrounds that are drastically different from those of the retail stores. For example, upstate New York citizens, who live very far from cities, travel to Woodbury Commons to experience the “feeling” of the urban cities by purchasing name brand items at a much cheaper cost than what they would pay in retail stores of the metropolitan area. This attraction of the new consumer market, driven by steep discounts and low prices, allows people from lower socioeconomic classes from rural areas to experience shopping at a flagship retail store.

In addition to the geographical location, the outlet malls’ architecture and structure also dictate consumer behavior and loyalty. Through the mall’s structuring in a manipulative manner, the consumers are directed to certain stores more than others. Customers are more likely to develop brand familiarity toward stores positioned in easily accessible places due to frequent exposure and shopping in that particular store. Guliz Ozorhon examines the change of the shopping malls’ space structure throughout history, where she emphasizes that in modern shopping malls, the “customer circulation area receives natural light, features an atrium and galleries and connects shopping areas with the foot-court and amusement center. . .the visitors can easily find all stores within a spatial integrity” (Ozorhon 123). Through the malls’ design, the customers can easily travel between stores due to the visible and open space between the stores and throughout the malls. The customers are directed through specific busy areas of the mall with high foot traffic because of the specific purpose dedicated to the design and layout: creating highly consumer concentrated areas in certain parts of the mall to increase the likelihood of the consumer shopping, thus profit. In Woodbury Commons, major

brand outlets are placed right at the mall entrance from every parking lot due to the high concentration of consumers and ease of access to maximize profits. Major stores, such as Polo Ralph Lauren, Gucci, and Yves Saint Laurent, are placed in the center (Image 1). Through carefully placing these stores at the entrances, the individual is strategically placed within close proximity of the store as soon as he or she enters. These stores attract many more customers than the stores in the corner of the mall, such as the Fragrance Outlet, where the individual or the collective hardly goes shopping (Image 1). Through the strategic placement of the stores, the mall guides the collective shopping patterns by influencing individual shopping patterns. The cycle repeats indefinitely, leading to repeating shopping patterns and consumer behavior.



The shopping experience provided by outlet malls is enhanced by influencing the consumer’s emotive and cognitive psyche. By affecting the consumers in this manner, brands can build a loyal and stable consumer base to produce profits. The shopping experience is formulated by the structure and illumination of the store because these aspects greatly influence the individual’s mood. To research the effects of ambiance on the consumer, Teresa Summers conducted a study which she found that, “The combined effects of pleasure, arousal, and dominance influenced people’s behavior in particular environments...the lighting was a chief factor in the environment’s impact on individuals because “brightly lit rooms are more arousing than dimly lit ones” (Summers 146). In the same study conducted by Teresa Summers, the collected data supported the idea that the customers were more likely to touch and try on items when the store was illuminated in bright, warm colors (Table 2). In Table 2, Summers measures customers’ probability of interacting with the merchandise and possibly buying it. The table shows how if 75 items are on display with proper ambient lighting, 33 products will be touched, and 12 will be

picked up. Summers later compares this data with non-ambient lighting data and finds a significant increase in consumers' chance of buying the item in proper ambient lighting than in the absence of ambient lighting (Summers 147). A warm ambiance provides an inviting atmosphere, making the customer feel appreciated and welcomed. Such ambiance leads to higher levels of satisfaction and a higher probability of purchase. Outlet brands can gain profits due to the designing of store environments to produce specific emotional effects in the consumer to enhance purchase probability, while creating a satisfying shopping experience.

Table 1
ANOVA of consumer approach behaviors at test displays

Source	df	F		
		Time at display	# Items touched	# Items picked up
Main effects				
Store display	1	75.34***	33.16***	12.06**
Lighting	1	1.19	3.95*	4.96*
Two-way interaction				
Display × lighting	1	11.15**	6.84**	13.53***
Covariate				
Age	1	9.21**	2.96	0.12
Error	4729	573.50	4.32	0.13

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

Table 1

In addition to an outlet store's ambiance, the customers' non-communicative interactions significantly affect consumer behavior. To prove its effects on consumer behavior, Hyorkjin Kwon conducted a study in which she measured the relationship between perceived similarity to other customers and shopping mall satisfaction; she concluded that "such social influence further can take place through several "social forces": (1) the number of others, (2) the spatial or temporal distance with others, and (3) the importance (relevance) of others" (Kwon 305). Due to collective customers' presence, individual customers shift and adapt to match the masses' shopping behavior. However, this adaptation depends significantly on one primary factor: population density. Depending on the collective's density in a store, the customer's satisfaction and behavior are governed. If the population density is too low, the customer will perceive that the store is not suitable due to its lack of customers. On the other hand, if the store is too densely packed with customers, the individual does not have enough space and privacy to touch the items, try them on,

and purchase them. Therefore, satisfaction is lowered. The perfect balance in population density must be achieved to maximize success and customer satisfaction.

Even though store illuminations and perceived similarities greatly influence the customers in retail stores, the outlet stores attract more customers because they are more open and easier on the eye than their retail counterparts. By structuring outlets to be spacious and open, the dimensions needed to portray the image of low prices and sales are achieved. By keeping the interior of outlet stores more open and spread out, the prices and sales of products are highlighted much more effectively due to lack of distraction of extra goods, which helps the customer visually identify the discounts (see Image 1). This highlighting of low prices attracts more customers to the individual stores and the outlet mall. In the business model, using open space increases customer satisfaction because the more open organization of the outlet stores emphasizes the low prices.



Image 2a: Hollister - Retail Store



Image 2b: Hollister - Outlet Store

Due to the difference in how they display their prices and products, the methods can attract different consumer markets to both branches of the brand: retail and outlet. Pricing is based on the quality of the inventory. The outlet store inventory has the same look as the retail store inventory, but it lacks quality and longevity. Therefore, the prices are drastically lower in outlet stores. In his study on differences between the outlet and retail stores, Gonca Soysal studies the different variables of outlet and retail stores that can be studied to find consistent patterns in their selling strategy (Soysal 2701; see Table 2). As the table highlights, the mean store price of a retail store (40.7) is almost double the mean store price of the outlet store (20.2) while providing almost triple the assortments found in outlet stores (967.1 vs. 273.3). As a result of the gap in the mean price of product between the two channels of a brand – retail and outlet – the customers that they attract vary greatly.

Table 1 Summary Statistics for the Marketing Mix Variables Used in the Model

	Mean	Standard deviation	Maximum	Minimum
<i>Store price</i> (in \$)	40.7	5.3	48.9	31.0
<i>Outlet price</i> (in \$)	20.2	1.7	23.0	17.3
<i>Store cost</i> (normalized)	100.0	11.8	121.7	81.3
<i>Outlet cost</i> (normalized)	56.7	6.1	67.1	47.9
<i>Store assortment</i>	967.1	19.2	1,009.2	928.8
<i>Outlet assortment</i>	273.3	8.1	286.6	257.0

Table 2 - Soysal

Both channels attract customers from many different cultures, ethnicities, and socioeconomic backgrounds. The creation of the two channels resulted from a shift in retailing strategy. The initial use of the outlet stores was to get rid of excess ‘sitting’ inventory of the retail stores, but as brands modernized, they started to get deeper insights into their consumer’s psyche and their shopping behavior. The observation that brands made is examined extensively by Anne Coughlan, who studied outlet malls’ strategic segmentation. Coughlan recognized the brand’s separation into two channels and that “effectively segmenting different consumer types does not necessarily guarantee higher profits in a competitive market. In markets where service is an important element of the “package” that the consumer buys, manufacturers effectively compete across two dimensions (service and price).” (Coughlan 63). The brands’ recognition of the two-dimensional shopping experience allowed them to evolve their retail strategy to cater to different consumer markets. By producing separate inventory for the outlet channel, brands could increase their customer base drastically. Through this new strategy, brands can keep one dimension constant (service) while varying the second dimension (price). By keeping service constant and varying price points, the brands can tailor specific channels for specific niches in the consumer markets. The retail stores attract customers from the upper and upper-middle socio-economic class looking for an excellent shopping experience to go along with their high quality and durable merchandise. On the other hand, the outlet stores attract customers from the lower and lower-middle class that want the same shopping experience as the retail shoppers but with a lower price. Through channel segmentation, brands can tap into different markets that were out of their reach before. As Coughlan mentions, the segmentation of customers might not always

guarantee higher profits, and the profits will be unstable in the short run. However, in the long run, the brands may gain and maintain loyal customers who shop at their channels regularly, resulting in increased profits (Coughlan 74).

The varying price points of the two channels creates an image for each store even though the service offered is the same. On one hand, the retail store is regarded as the “flagship” store with the best and newest products that are curated with high quality. The high prices separate the wealthy and elite from the rest of the population. This distinction has provided them a means to purchase exclusivity. The exclusivity factor is a concept utilized in many consumer markets to attract customers with a higher budget. The appeal of exclusivity is explained by Anita Radón in her study of luxury brand strategy studies, where she explains that luxury “intrigues and allures and the word is used in every other advertisement, often indicating something positive, something worth striving after, something worth desiring” (Radón 106). Due to a financial barrier to attaining luxury, luxurious goods have developed an exclusivity which only a few can overcome while leaving the rest to find a substitute. Through exclusivity, the retail stores attract customers who want to become a part of the image and the status that the retail channel owns: the flagship. On the other hand, the outlet store is given the reputation of a “substitute”. Nevertheless, what the outlet channel offers is an environment that makes it familiar for the average customer to shop there. Such perceived similarity consequently leads to satisfaction and comfort. Due to finding comfort in shopping at substitutes, buying the exclusivity of the flagship store at a much lower price is normalized. The want or the need to buy the exclusivity of the flagship store makes the outlets very successful because no matter where an individual is on the socioeconomic scale, they can purchase a product similar to those in a flagship store.

The exclusivity appeal of retail flagships can be demonstrated perfectly by the Italian luxury designer brand, Gucci. Gucci stores are very distinguishable from all other stores due to their minimal yet grand exterior design. The store sign is small, while the store is the biggest in the World Trade Center Mall, which encompasses all of the retail flagship counterparts to the outlets at Woodbury, giving it a luxurious and prestigious look. Furthermore, the entrance to these stores are guarded by two security guards dressed in tailored suits. The appearance of the security adds to the store’s image as a very high-end and expensive store meant for those who want the best shopping experience. This image

created by Gucci lures customers in to see what is behind the grand and guarded entrance. Once inside, the customers cannot touch any products on display without getting assistance from the employees. This separates the customers from the items they want, therefore playing on the human psyche of wanting the unattainable. Even though they create the image of exclusivity and luxury, their main goal is to sell products.

Furthermore, to highlight the “distance” between the customer and the products, the lighting is set up to highlight the products specifically; this “distance” further emphasizes the things that the customers can not buy or touch without overcoming the financial exclusivity barrier. In her study of the luxury brand paradox, Anita Radón explains how luxury brands play on the exclusivity concept by “sell[ing] as much of their product as they can while, on the other hand, their very object in proclaiming their product a ‘luxury’ might seem to imply exclusiveness... the luxury incumbents, like magicians, seek to perform an illusion where actual scarcity is replaced by a perceived rarity” (Radón 107). By manipulating customers to perceive exclusivity through grand appearances, these high-end stores, especially Gucci, can sell products on a larger scale while maintaining the illusion of rarity.

While the luxury brand functions to generate profits and attract consumers through the perception of rarity and exclusivity, the outlet counterpart plays on that illusion to attract customers and generate profits through breaking the “distance” between the consumers and the goods. For example, the Gucci outlet store at Woodbury Commons has a more modern and grand exterior design than all other stores, making it recognizable even without the Gucci sign. This exterior displays the prestige of the brand. To add to the exterior facade of exclusivity, the store has security guards in tailored suits, just like their flagship store, to give it the same appeal factor. The store is located in the center of the mall, which adds to its importance in relation to every other store present at Woodbury Commons. However, unlike the store in the World Trade Center, once customers enter the store, they are allowed to touch the items without anyone’s assistance. The products are spread out over a vast, open space with prominent signs of sale prices. The lighting is directed so that the focus is put on the sale signs, which is the opposite of the flagship store, where the lighting is placed strategically to emphasize the products. This shifts the focus off of the exclusivity factor and onto the low prices. With the exterior giving the presence of exclusivity and elitence, and the interior putting a strong emphasis on the low prices of the products

compared to the prices of the retail store items, customers can experience both the feeling of a high-end shopping experience and low prices.



Image 3: Public space as a main gathering area for relaxation and refreshments. Image 3 Public space as a main gathering area for relaxation and refreshments.

In addition to the store's exterior structure and internal organization, the space surrounding it greatly influences customers' chances of shopping there. The outlet mall's public space helps to create a unique environment that partially takes the individual out of their bubble and enables them to see others as more than just strangers, as "whole people." By sharing the same public space for the same purpose, the individual can see others more than just "present". The individual can see the similarities they share with others. The acknowledgment of sharing similarities helps the individual feel comfortable in the environment, especially in an outlet mall, where everyone goes shopping for "substitutes". Ash Amin describes the concept of the temporary shift in the individual's perspective in public spaces in his study of the collective culture and urban public, where he explains that "this temporary shift in perspective allows the individual to see others different from oneself responding to the same setting in similar ways which forms a temporary bond" (Amin 6). This bond is a primary foundation of the shopping experience they get because not only do people go to public spaces to shop, but also to experience a sense of community. To study the relationship between perceived similarity, social presence, and satisfaction, Hyorkjin Kwon conducted a study which concluded that, "the importance of mere social presence is further highlighted as our analyses reveal its direct impact on satisfaction after controlling for the effects of mediators on satisfaction. This finding is consistent with

previous research that reported the effectiveness of the mere presence of others in the context of traditional shopping mall shopping (Argo et al. 2005)” (Kwon 308). The customer’s perceived similarity to others will lead to higher satisfaction within the outlet mall because they will feel more comfortable and welcomed when buying the flagship retail experience at a lower price. Due to the direct effect of the perceived similarity of shopping mall satisfaction, the curation of public space is vital to an outlet mall’s success.

CONCLUSION

Since the earliest concept of maximizing profits off of damaged goods to the present day outlet malls, the concept has progressed dramatically. With the progression came the evolution of the philosophy behind the outlet store. The initial shift from selling damaged goods to producing exclusive low-end substitutes managed to cement the idea of outlet malls due to their success. Upon establishment, the physical stores revolutionized the retail landscape regarding the different consumer markets that a single brand could tap into. Furthermore, the brands revolutionized their business strategy in their outlet stores to create customer brand loyalty through low prices, a specific organization for optimizing outlet goods, and providing a comforting and welcoming environment. With the technological era upon us, the outlet stores can adapt their business strategy to take advantage of the technological advancement to tap into unimaginable consumer markets.

WORKS CITED

- Amin, Ash. “Collective Culture and Urban Public Space.” *City*, vol. 12, no. 1, 2008, pp. 5–24., doi:10.1080/13604810801933495.
- Coughlan, Anne T., and David A. Soberman. “Strategic Segmentation Using Outlet Malls.” *International Journal of Research in Marketing*, vol. 22, no. 1, 2005, pp. 61–86., doi:10.1016/j.ijresmar.2004.03.003.
- Hathaway, James T. “Factory Outlet Malls: The Example of Prime Outlets at Grove City.” pp.1–8.<https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.196.4928&rep=rep1&type=pdf>.
- Kwon, Hyorkjin, et al. “The Impact of Perceived Similarity to Other Customers on Shopping Mall Satisfaction.” *Journal of Retailing and Consumer Services*, vol. 28, 2016, pp. 304–309., doi:10.1016/j.jretconser.2015.01.004.
- Merrilees, Bill, et al. “Culture and Marketing Strategy in Discount Retailing.” *Journal of Business Research*, vol. 60, no. 3, 2007, pp. 215–221., doi:10.1016/j.jbusres.2006.10.016.

- Ozorhon, Guliz, and Ilker Fatih Ozorhon. "Investigation Of The Change Of The Shopping Mall'S Space Organization In Istanbul." *Journal Of Architecture And Urbanism*, vol. 38, no. 2, 2014, pp. 120–129., doi:10.3846/20297955.2014.916502.
- Radon, Anita. "Luxury Brand Exclusivity Strategies – An Illustration of a Cultural Collaboration." *Journal of Business Administration Research*, vol. 1, no. 1, 2012, doi:10.5430/jbar.v1n1p106.
- Soysal, Gonca, and Lakshman Krishnamurthi. "How Does Adoption of the Outlet Channel Impact Customers' Spending in the Retail Stores: Conflict or Synergy?" *Management Science*, vol. 62, no. 9, 2016, pp. 2692–2704., doi:10.1287/mnsc.2015.2262.
- Summers, Teresa A., and Paulette R. Hebert. "Shedding Some Light on Store Atmospherics: Influence of Illumination on Consumer Behavior." *Journal of Business Research*, vol. 54, no. 2, 2001, pp. 145–150., doi:10.1016/s0148-2963(99)00082-x.

Sheila Chumbimune

Embracing Solitude in *Scum's Wish*: Navigating through Contemporary Japan

ABSTRACT

This paper evaluates the role and importance of solitude in contemporary Japanese society through the eyes of Hanabi Yasuraoka, protagonist of the manga Scum's Wish by Mengo Yokoyari. The major components framing this solitude include individualism, collectivism, and well-being, which will be defined and supported through the work of psychological and sociological articles, research studies, and an essay on the history of self-actualization in Japan. This paper will demonstrate how the current Japanese social paradigm of individualism and collectivism can be improved by promoting individual well-being through embracing solitude, as Hanabi did. Even though these individualist and collectivist approaches to life are both viable methods for achieving well-being in Japan, self-knowledge is the true key to finding the most appropriate individual direction and to having the strength to take that path of self-discovery; as Hanabi later learned, aloneness may be conceptually linked to loneliness, but it can also yield a stronger sense of authenticity, self-knowledge, and control in the solitude and freedom that it offers.

INTRODUCTION

The values instilled in people and the beliefs they hold about how to achieve their own individual well-being have a large impact on their lives. But, society also plays an important role in shaping individual values in order that people develop the skills necessary to thrive; individuals must learn how to adapt to maintain their own well-being as society changes. Known for centuries as having a rich culture defined by loyalty to kin, traditional notions of Japanese collectivism are now giving way to globally-supported trends towards individualism. Yet, centuries-old collectivist values still hold sway in Japanese society. How can Japanese people navigate through such a complex and evolving landscape? In the graphic novel *Scum's Wish*, known as a “manga” in Japan, high school student Hanabi Yasuraoka lives a life in a country modeled on contempo-

rary Japan, where she is challenged with navigating between competing individualist and collectivist visions. *Scum's Wish* follows her experiences as she meets Mugi Awaya, a student with whom she begins a fake relationship to alleviate the distress brought on by another unrequited love. Ultimately, however, Hanabi quits this artificial arrangement and moves on, alone, in search of the ideal relationship or what she calls “the real thing” (Yokoyari 44; vol. 8).

This paper will analyze the collectivist and individualist value systems in contemporary Japan in relation to the concept of solitude. This will help improve dialogue surrounding competing notions of how to achieve individual well-being in Japanese society by presenting an alternative perspective, by demonstrating how Hanabi's journey of solitude in *Scum's Wish* can be used as a solution to the tension between collectivism and individualism in contemporary Japan. The first section will discuss the presence of collectivism and individualism in Japan and the negative association with individualist values. The second section explores how individualism and collectivism are sound approaches to lead a fulfilling life but that self-knowledge is ultimately key to a successful application of either. The last section examines how solitude is different from loneliness and can be useful for acquiring self-knowledge through the promotion of self-perception and autonomy to enhance individual well-being. The aversion to aloneness, not the tension between collectivism and individualism, limits pathways to securing individual well-being that can be overcome by enhancing self-perception and promoting autonomy.

A JAPANESE CONCOCTION

Japanese society is currently experiencing a clash between collectivist and individualist values. Hanabi's story reflects this value-driven competition as she struggles to utilize individualist values within a predominantly collectivist society. Yuji Ogihara's “Temporal Changes in Individualism and Their Ramification in Japan: Rising Individualism and Conflicts with Persisting Collectivism” examines individualistic behavior and cultural changes in Japan. Due to globalization, one challenge that Japanese society faces is that despite its values becoming more individualistic, “[I]t has also been shown that some collectivistic values still remain. As a result, people have difficulty in adapting to this coexistence, which injures interpersonal relationships and well-being” (Ogihara 1). Japanese individuals are having difficulty deciding what value systems to adopt,

and although individualism is on the rise: in order to promote individual well-being it is necessary to prepare for the disturbances that will be caused by the clash of the competing value-systems. As Daphna Oyserman and two of her colleagues argue in, “Rethinking Individualism and Collectivism: Evaluation of Theoretical Assumptions and Meta-Analyses”, “The core element of collectivism is the assumption that groups bind and mutually obligate individuals” (5). Collectivism focuses on the greater good of a collective whole, promoting the value of group success above individual objectives. In contrast, “The core element of individualism is the assumption that individuals are independent of one another” (Oyserman et. al., 4). Therefore, individualism is often associated with both success and selfishness due to its self-centered concentration on individual well-being.

Individualism emphasizes that people are independent units while collectivism emphasizes that people are interdependent upon one another. Collectivist cultures traditionally have a social hierarchy with authorities of different social status; individualist cultures promote individual action and encourage the development of self-realized opinions and knowledge (Leake and Black). By this definition, collectivism and individualism can be understood as antagonistic value systems. Collectivist values emphasize choosing to fulfill group roles instead of pursuing individual goals, obeying authority figures instead of rebelling against them, upholding traditional cultural practices instead of embracing progressive ideals, promoting cooperation instead of competition, valuing status over self-expression, and prioritizing common rather than individual ownership (Leake and Black).

Throughout several volumes of *Scum's Wish*, Hanabi exhausts herself in an effort to avoid becoming “scum” by indulging her selfish desires. For Hanabi, being deemed as scum is not necessarily a judgement for indulging in sexual exploration, but rather a judgement of the reasoning behind an individual's actions, especially actions geared towards prioritizing the self or other people, individualism or collectivism. Scum represents extreme individualism, reflecting the indulgence of egotism and selfishness. Hanabi's repulsion to individualism and viewing individualistic actions as “scummy” can be linked to Japan's aversion to individualist values. Hanabi's resistance to becoming scum coincides with her wariness to individualism since selfishness originates from individualist values. Yet, Hanabi is still dissatisfied as she does not allow herself to freely pursue her individualism. She yearns for a relationship that achieves

her goal of having individual autonomy but feels conflicted when taking actions she perceives as “selfish”, such as starting relationships with others despite a lack of emotional commitment. These conflicting emotions leave her in a state of crisis in which she believes that she will be unhappy whether she indulges in her selfish desires or not. Being overwhelmed by two opposing value systems, Hanabi’s inability to know what she wants makes it difficult for her to find meaning in her life.

Understanding the conception of self-actualization in Japanese culture provides insight into Hanabi’s unwillingness to absorb individualistic values. In “Self-Actualization and/or Self-Realization in Japan: A Historical Approach to Its Various Aspects”, author Hidekazu Sasaki identifies the core characteristics of self-actualization in Japan in the decades after World War II. In 1970s Japan, self-actualization was used to restrict individualism by promoting the collectivist idea that self-actualization could only be achieved through nationalism. Yet, by the 1980s, Japanese consumerism had a transforming effect on the idea of self-actualization by bringing about a wave of individualism (Sasaki 166). During this time, Japanese society began to experience tension between the traditional collectivist values and insurgent individualist values. Sasaki argues that if the individualistic-based idea of self-actualization in the 1980s “had spread widely, Japanese society would have become full of strong egoists and might have dissolved into pieces, despite the famous solidarity of this small island country” (168). While Hanabi’s unwillingness to welcome individualist approaches correlates with the staying power of collectivism, there is still a negative association between individualism and selfishness. In *Scum’s Wish*, Akane Minagawa embodies what it means to be scum since she lives a life built on individualist values. Unlike Hanabi, Akane thrives by doing what she wants even if it hurts others around her by asserting that “You have to think about yourself” (Yokoyari 3; vol. 4) and that “[her] selfish desires fulfill [her]” (Yokoyari 5; vol. 8). Hanabi both desires and despises this approach, as she covets the level of freedom and confidence that Akane has, yet also feels that it is conceited, destructive, and selfish. In situations where she believes she has acted selfishly, Hanabi scolds herself because “Today you took advantage of how someone felt about you for the first time. You’re no different from that woman! You’re scum! Congratulations!” (Yokoyari 5; vol. 3). Given Japan’s negative historical association with the concept, Hanabi associates selfishness with scum and defines Akane as such because of her selfish actions. These conclusions reflect Hanabi’s disgust with Akane and show why she resists

taking an individualist approach.

COUPLED SUCCESS

Scum's Wish shows that neither individualism nor collectivism is necessarily better for Japanese society; either approach can be used successfully to achieve individual happiness and social stability. In "Emotional Expression in Tsukiau Dating Relationships in Japan," James Farrer investigates the meanings and purposes of tsukiau, or "going steady," in Japanese dating (169). After interviewing 135 Japanese young adults, Farrer concluded that they were:

experiencing an increasingly long phase in their 20s in which the natal family no longer serves as the emotional center or psychological *uchi*... For young people living in these coresident (but not necessarily emotionally copresent) households, the tsukiau partner becomes the most important source of emotional intimacy and support, the new psychological *uchi*, in which the true self can be revealed and understanding and support expected. (184)

In Japan, the importance of the family as a social unit reflects a historically collectivist approach. The new *uchi* reflects a divergence from the traditional collectivist idea of family being the primary social unit. Young Japanese people are putting aside the institutions of family and marriage to have more individual freedom and fewer emotional responsibilities, an approach based on individualist values; they "want security and stability in their tsukiau relationships but also want free time and the chance to socialize outside the relationship" (Farrer 185). Yet, the growing importance of the tsukiau partner also fosters dependency and promotes values not only concentrated on the self but also on another person. Young Japanese adults are allowing their true selves to be revealed to better their individual well-being, by using an individualistic approach to develop familial relationships, moving away and seeking their own freedom; but they are also simultaneously using a more collectivist approach to viewing romantic relationships, as they make their newfound partners their emotional centers. This further reflects that personal success can be gained from using either approach to make life decisions. While the ability to use either approach may seem perplexing to Japanese traditionalists, finding a mechanism for the proper application and navigation of individualism and collectivism can bring success through either.

Another example of how the collectivist or individualist approach can enhance individual well-being is explained by Steven Stack and his colleagues in “Marital Status and Happiness: A 17-Nation Study”. The authors conclude that “Unhappily married persons may choose to divorce rather than to remain married, resulting in a net effect of higher rates of happiness among those remaining married” (Stack et al. 535). Higher divorce rates are classified as individualistic choices, and this is used to identify the rise of individualism in Japan in Yuji Ogiwara’s “Temporal Changes in Individualism and Their Ramification in Japan: Rising Individualism and Conflicts with Persisting Collectivism”. This classifies divorce as an individualist approach and marriage as a collectivist approach. Steven Stack’s main argument of his article is to show how married people are happier because unhappily married people will opt for divorce, which in turn affects the overall rate of happiness within married people. While these married people seem happier, those who are unhappy are more likely to choose divorce as a way to increase their well-being. Further, divorced people who remarry contribute to a higher overall happiness score among married couples. Nevertheless, marriage does not always lead to happiness and the collectivist-approach to life does not always yield success. Some unmarried people also may be happier in a relationship, and the individualistic-approach to life does not always yield success. As Stack’s research shows, both or either can be applied to improve individual well-being.

In *Scum’s Wish*, Narumi, Hanabi’s unrequited love, follows a collectivist approach to life. He confesses to Akane that what makes him happy is to have “the people I adore ... to be happy and healthy. That’s all” (Yokoyari 14; vol. 8). Although Akane usually pursues an individualist approach to find fulfillment, when she falls in love with Narumi she realizes instead that it might be beneficial to take a more collectivistic approach, and agrees to marry him. However, she also communicates her desire to retain some individualism, by telling Narumi that “I will cheat on you like crazy” (Yokoyari 22; vol. 8). Thus, she breaks the structure of a traditionally collectivist Japanese relationship through her declaration to continue seeing other men. While others like Hanabi may fear becoming highly selfish, it is important to recognize that being scum is not necessarily an unfavorable outcome for some people. In Akane’s case, some of her “scummy” traits contribute to her individual well-being. As figure 1 shows, Akane and Narumi’s relationship, while seemingly paradoxical, contributes to their well-being and happiness. The panel focuses on them

as they rejoice under a decorated arch as the left side of the panel is illuminated by light.



Figure 1. Akane and Narumi celebrating their happiness p. 27, vol. 8.

Having the appropriate self-knowledge to choose and apply either approach is key to improving one's well-being. In "Thine Own Self: True Self-Concept Accessibility and Meaning in Life", Rebecca Schlegel introduces a theory that defines authenticity as "the unimpeded functioning of one's true self in daily life ... authenticity is positively related to such important outcomes as self-actualization, self-concept clarity, and self-esteem, and negatively related to psychological distress" (Schlegel 2). An inability to access the true self would neglect individual well-being in preventing self-reported authenticity or authenticity that is self-aware. Related to the concept of self-reported authenticity is self-actualization which was used for individualist or collectivist means in Japan throughout the 1970s and 1980s. In this sense, just as self-actualization can apply to either individualist or collectivist approaches, self-reported authenticity can be achieved through collectivist-based or individualist-based actions. Additionally, as Schlegel notes,

because the extension of the true self-concept to experiences imbues those experiences with feelings of meaningfulness, the simple activation of the true self-concept itself should be sufficient to elicit a corresponding increase in meaning in life, even in the absence of the phenomenological experience or actual expression of one's true self-concept. (24)

The true self, or at least an individual's attempt to find their true self through self-actualization and authenticity, gives people the ability to attain fulfillment and find meaning in life, regardless of a value-system.

Meaning and proper self-knowledge provide the direction necessary to navigate through Japanese society. Much of the psychological distress that Hanabi experiences throughout the manga is due to her inability to express or even access her authentic true self. This distress is illustrated by a conversation with herself in figure 2. In the panels, two “versions” of Hanabi argue with each other about whether to act on her selfish desires which causes clear distress as she tearfully shouts for her “other self” to be quiet. She second-guesses herself because she has yet to figure out what she truly values in her life. When Hanabi finally finds her true self at the end of the manga, she is no longer uncertain about who she is. As figure 3 shows, she is tearful but at peace as she ends her relationship with Mugi and embraces an individualistic approach to achieving personal well-being.



Figure 2. Hanabi in distress
p. 20, vol. 4.



Figure 3. Hanabi at peace
p. 44, vol. 8.

REEVALUATING ALONENESS

In Japanese society, the concept of aloneness is traditionally equated with loneliness, a belief shared by Hanabi. However, loneliness and solitude are two separate experiences of “being alone”. In “On Loneliness” author Adrian Franklin notes that in modernity “loneliness is the price we pay for our freedom and choice” (352). This concept of loneliness has some relevance in Japanese society. In her paper “Exploration of Japanese Single Women’s Identities in Japan”, researcher Eriko Maeda reveals that “many single women felt they had freedom of time, money,

and decision, and that they utilized it for the benefit of their work and leisure. It appears that the freedom many single women currently enjoy is the freedom to think about and act for themselves ... it may come at a cost—the cost of being alone” (Maeda 88). In this sense, Japanese women are associating the cost of freedom with being alone and equating that with loneliness. If loneliness is assumed to be the cost, this can deter people from being open to properly experiencing aloneness and choosing an individualistic approach to life which might ultimately be to their benefit. The disinclination to be alone is also present in *Scum's Wish*. Throughout the onset of the manga, before she recognizes her true self, Hanabi repeatedly mentions how she hates being alone and feels miserable (see figure 4). She lies alone on her bed, and, in an attempt to find comfort, curls into a fetal position, her eyes left un-drawn and her panel colored gray. The text boxes are entirely black to reflect Hanabi's feelings of loneliness as she is contrasted next to panels showing Narumi, her unrequited love, holding hands with Akane. Like the Japanese woman in Maeda's study who confessed that “When I think about it, I sometimes feel empty about being alone” (151), Hanabi also associates aloneness with emptiness.



Figure 4. Hanabi hating being alone p. 9, vol. 4.

However, aloneness is not the same as loneliness because it can yield solitude. Solitude allows an individual to discover their true self. Authors Christopher Long and James Averill explore the concept of solitude in “Solitude: An Exploration of Benefits of Being Alone”. They claim that “the paradigm experience of solitude is a state characterized

by disengagement from the immediate demands of other people—a state of reduced social inhibition and increased freedom to select one’s mental or physical activities. Such a state is typically experienced when a person is alone” (23). By this understanding, the freedom and benefits obtained from aloneness do not come at the cost of being lonely. Instead, the benefits are entirely separate from the idea of aloneness being a price to pay. While loneliness encompasses the negative experiences of aloneness, solitude includes all of the positive aspects of aloneness. Therefore, the freedom of solitude can be used for a range of purposes, including learning about the self and intrinsic beliefs, to contribute to feelings of control, security, and well-being.

In *Scum’s Wish*, Hanabi’s aversion to aloneness does not allow her to discover the benefits of solitude. Noriko Kamomebata is another character in *Scum’s Wish* who has a similar experience to Hanabi in finding and then losing an unrequited love. During a conversation, Noriko suggests that Hanabi can view her experiences with aloneness as a manner of “[walking] your own way” (Yokoyari 12; vol. 7). This way, Hanabi could learn from being alone instead of thinking of aloneness as a painful time of loneliness. In this scene, Hanabi’s eyes become fully opened to emphasize the epiphany that she’s had. The following panel shows her chuckling about how foolish she was not to have realized this sooner (see figure 5). As Long and Averill mention, solitude is typically experienced alone but is not limited to being alone. After Hanabi’s conversation with Noriko, Hanabi enters a brief period of solitude where she reflects on her previous



Figure 5. Hanabi’s epiphany
p. 14, vol. 7.

experiences of aloneness. This solitude allows Hanabi to find her authentic true self. This reevaluation of how she perceives herself allows her to gain a level of self-knowledge that gives Hanabi the opportunity to pursue her well-being either through an individualist or collectivist approach.

Solitude also promotes the concept of autonomy, or self-directing freedom, which serves an important role for an individual in any society. In “Differentiating Autonomy from Individualism and Independence: A Self-Determination Theory Perspective on Internalization of Cultural Orientations and Well-Being” Valery Chirkov found that “whether one’s behavior and attitudes are individualistic, collectivistic, horizontal, or vertical in nature, more autonomous enactment is associated with greater well-being” (106). Solitude, through self-reflection, allows an individual to be more in touch with who they are and what their values are, creating a sense of ease. Solitude complements autonomy by allowing for the growth of self-trust and the ability to rely on oneself to make productive decisions. Additionally, autonomy can benefit individuals in any value system. The few major decisions that Hanabi makes in *Scum’s Wish* are only possible because she acquires a degree of autonomy. This allows her to come to terms with Akane’s and Narumi’s engagement by letting go of Mugi and deciding that she wants to search for a worthy relationship that meets her standards. Hence, knowing whether an individualist or collectivist approach is more preferable depends on knowing oneself enough to make decisions with a degree of autonomy. Although Hanabi is alone she engages in a necessary self-reflection through solitude. Japanese society can embrace this concept to bring together the conflicting value systems of collectivism and individualism.

THE VALUE OF SOLITUDE

Hanabi’s disorientation relates to what many Japanese young adults experience in contemporary Japanese society, as she is wary of aloneness due to the misconception that it is the same as loneliness. Yet, this assumption limits their ability to discover their true selves and make autonomous decisions that will benefit their overall well-being. Solitude can be used as a mechanism to successfully navigate through modern Japanese society. In addition, while serving as a navigational tool, solitude can also help individuals find happiness by allowing them to fulfill personal values that are worth pursuing. Hanabi is an example of how solitude can be used for self-reflection to demonstrate what approach, col-

lectivist or individualist, is more suitable for personal well-being. These are steps that Japanese citizens can take if they make an effort to realize their true values, become open to different approaches, and understand that aloneness does not have to mean loneliness, but instead can mean self-discovery and solitude.

WORKS CITED

- Chirkov, Valery, et al. "Differentiating Autonomy from Individualism and Independence: A Self-Determination Theory Perspective on Internalization of Cultural Orientations and Well-Being." *Journal of Personality and Social Psychology*, vol. 84, no. 1, 2003, pp. 97–110. doi:10.1037/0022-3514.84.1.97.
- Farrer, James, et al. "Emotional Expression in Tsukiau Dating Relationships in Japan." *Journal of Social and Personal Relationships*, vol. 25, no. 1, Sage Publications, Feb. 2008, pp. 169–188. doi:10.1177/0265407507086811.
- Franklin, Adrian S. "On Loneliness." *Geografiska Annaler: Series B, Human Geography*, vol. 91, no. 4, Routledge, Dec. 2009, pp. 343–354. doi:10.1111/j.1468-0467.2009.00326.x.
- "Kuzu No Honkai Manga Online." *Kuzu No Honkai Manga Online*, kuzu-no-honkai.com/.
- Leake, D., and Black, R. *Essential tools: Cultural and linguistic diversity: Implications for transition personnel*. Minneapolis, MN: University of Minnesota, Institute on Community Integration, National Center on Secondary Education and Transition, 2005.
- Long, Christopher R., and James R. Averill. "Solitude: An Exploration of Benefits of Being Alone." *Journal for the Theory of Social Behaviour*, vol. 33, no. 1, Blackwell Publishing Ltd, Mar. 2003, pp. 21–44. doi:10.1111/1468-5914.00204.
- Maeda, Eriko. *Exploration of Japanese Single Women's Identities in Japan*, The Pennsylvania State University, Ann Arbor, 2006. ProQuest, <https://search.proquest.com/docview/305262102?accountid=13626>.
- Ogihara, Yuji. "Temporal Changes in Individualism and Their Ramification in Japan: Rising Individualism and Conflicts with Persisting Collectivism." *Frontiers in Psychology*, vol. 8, 2017, doi:10.3389/fpsyg.2017.00695.
- Oyserman, Daphna, et al. "Rethinking Individualism and Collectivism: Evaluation of Theoretical Assumptions and Meta-Analyses." *Psychological Bulletin*, vol. 128, no. 1, 2002, pp. 3–72. doi:10.1037/0033-2909.128.1.3.
- Sasaki, Hidekazu. "Self-Actualization and/or Self-Realization in Japan: A Historical Approach to its Various Aspects". *Bulletin of the Faculty of Education*, Utsunomiya University, vol. 59, 2009, pp. 157–172.
- Schlegel, Rebecca J., et al. "Thine Own Self: True Self-Concept Accessibility and Meaning in Life." *Journal of Personality and Social Psychology*, vol. 96, no. 2, 2009, pp. 473–490. doi:10.1037/a0014060.
- Stack, Steven, and J. Eshleman. "Marital Status and Happiness: A 17-Nation Study." *Journal of Marriage and the Family*, vol. 60, no. 2, National Council on Family Relations, May 1998, pp. 527–536. doi:10.2307/353867.
- Yokoyari, Mengo. *Scum's Wish*. Vol. 3, Yen Press, 2017.
- Yokoyari, Mengo. *Scum's Wish*. Vol. 4, Yen Press, 2017.
- Yokoyari, Mengo. *Scum's Wish*. Vol. 7, Yen Press, 2018.
- Yokoyari, Mengo. *Scum's Wish*. Vol. 8, Yen Press, 2018.

Manav Parikh

Biofuels: The Future of Fuels

ABSTRACT

Since 1900 the United States has been heavily dependent on fossil fuels, which make up at least 80 percent of U.S. fuel mix. However, the use of fossil fuels has led to an increase in pollution and the depletion of ozone layers, leading to an increased risk of skin cancer. Additionally, fossil fuels are one of the main causes of the rapid progression of global warming, which is one of the main reasons food and water supply are endangered in the future. Global warming will cause an expansion of tropical regions, thus allowing more disease-carrying insects to expand their areas. In short, fossil fuels have a devastating impact on the future of the world, but these risks have been overlooked because of fossil fuels convenience and utility for the common American. As fossil fuels continue to be consumed at an alarming rate, it is time to look into viable, sustainable, and environmentally-friendly alternatives. Biofuels have the potential to replace fossil fuels as they are a renewable resource that are better for the environment. However, the process of producing biofuels is far too flawed to be applicable at the moment. It must be refined in a way that can meet the demands of the common American as well as stay as economically viable as fossil fuels have been for so many years. This paper delves into the particular aspects of the biofuel production process that can be improved to make biofuels the future of fuels.

BACKGROUND

Due to the impact of the Industrial Revolution the United States, primarily built on agriculture and craftsmanship, shifted to industries focused on consistent innovation and production. This resulted in factories and assembly lines which improved the living standards of many Americans. However, it also led to the rapid depletion of Earth's natural resources, such as fossil fuels. Fossil fuels, such as coal, can be burned to be used as a source of energy. This source of energy is quite harmful to the environment, leading to unprecedented levels of pollution, which increase global warming at a quicker rate than ever before. According to recent studies, the United States has approximately 53 years left before known oil and gas deposits are fully depleted ("The End of Fossil Fuels"). It is time to look to other sources of energy for the future. The next viable source of

energy should be capable of serving the same capabilities that fossil fuels were able to fulfill to sustain the current living standards of Americans. Additionally, they should be much less harmful to the environment, as fossil fuels have led to increased carbon levels, habitat destruction, and even water pollution. Implementing biofuels has the potential to both be sustainable and greatly help in slowing down the increase of carbon in the atmosphere.

INTRODUCTION

Biofuels have the potential to take the role of fossil fuels; however, biofuels are not widely used today for two reasons. Although they are less harmful than fossil fuels, biofuels are still too inefficient and too expensive. Secondly, the process of refining biofuels is not operating at its full potential, thus they cannot meet the demands as easily as fossil fuels have been able to for so long. This paper will delve into steps that will advance the progress of biofuel implementation including improving the yield of biomass, the necessary improvement of the supply system, making the production process less harmful to the environment, and controlling the spread of invasive species.

THE SHIFT FROM FOSSIL FUELS: WHY BIOFUELS

Despite the current restrictive requirements needed for using biofuels, they can still be an alternative source of green energy, making them a potential option for modern society. One of the most important uses of fossil fuels is transportation, and there are very few renewable resources that can perform this role as well as fossil fuels can. Biofuels are a renewable resource, and they could also be an alternative to fossil fuels because they can directly be converted into liquid fuels to be used for transportation. Coming in the form of ethanol they are made primarily from agricultural materials such as corn and sugarcane. Although certain biofuels emit higher concentrations of carbon dioxide, there are other sources of biofuels that produce energy with lower emissions of carbon dioxide (see figure 1). In the following chart, the x-axis represents the different forms of biofuel that are currently used and the y-axis represents the unit used to measure the emissions of the fuels. As the emission value gets higher, the fuel becomes a worse option.

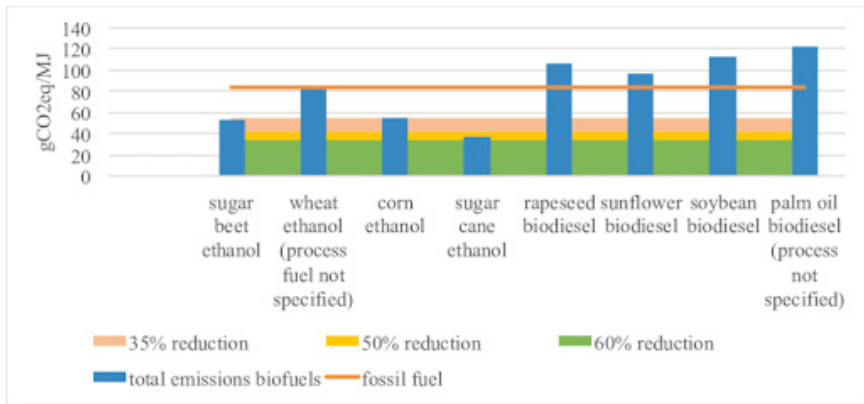


Figure 1. Biofuel emissions versus fossil fuel emissions from Bentivoglio, Deborah, and Michele Rasetti.

According to figure 1, wheat ethanol is on par in terms of emission with fossil fuels while rapeseed, sunflower, soybean, and palm oil biodiesels emit more than fossil fuels — however, the most important forms of biofuels that emit less than fossil fuels are sugar beet, corn, and sugarcane ethanol.

Over the decades, America has developed a strong reliance on fossil fuels. After all, the high energy output and the lower prices have made fossil fuels quite appealing, with the amount of energy per unit of fossil fuels exceeding the energy per unit of biofuels. In some gas stations both gasoline, a fossil fuel, and ethanol, a biofuel, are offered. In these instances, gasoline will often be the cheaper option and will give the driver more miles per gallon, but the consequences for human health that fossil fuels have on the American people should be considered. Fossil fuels such as coal, oil, and gas play a huge economic role in the United States, with Americans spending a total of about \$700 million to \$1 trillion dollars on fossil fuels annually (“The High Cost of Fossil Fuels”). Through this the United States sends millions of dollars overseas, leading to money that the domestic economy cannot keep. According to Feedstock Handling and Processing Effects on Biochemical Conversion to Biofuels by environmental science researcher Daniel Inman,

In addition to being the world’s largest producer of ethanol, the USA is the world’s top consumer of crude oil and the second-largest greenhouse gas (GHG) emitter, behind China. An average of 20,680,000 barrels (3,287,857 m³) of oil per day were consumed in the USA in 2007, which amounts to approximately 24% of the 2007

worldwide oil consumption. Burning fossil fuels to accommodate transportation is responsible for the emission of roughly 5720 Tg CO₂-equivalents annually. (Inman et al. 563)

In other words, the United States leads the world in the production of ethanol, but there are not enough consumers for its market to expand. While there are a total of about 150,000 gas stations in the country, only approximately 3,300 of them supply ethanol as well as normal gasoline. The United States would not be the only place that would benefit from the change to biofuels. The replacement and subsequent phasing-out of gasoline in America would change economies worldwide, and the large environmental impact the United States has on the globe would drop since this country makes up approximately one quarter of the world's oil consumption.

What differentiates fossil fuels from biofuels regarding their impact on the environment is how they manage carbon atoms. Fossil fuels only add additional carbon from carbon dioxide into the atmosphere when they are burned. As seen in Figure 2, biomass-based energy is carbon dioxide neutral; the carbon dioxide that is absorbed by the plants is virtually equal to the carbon dioxide released when the fuel is burned. Compared to fossil fuels, the burning of biofuels produces fewer carbon

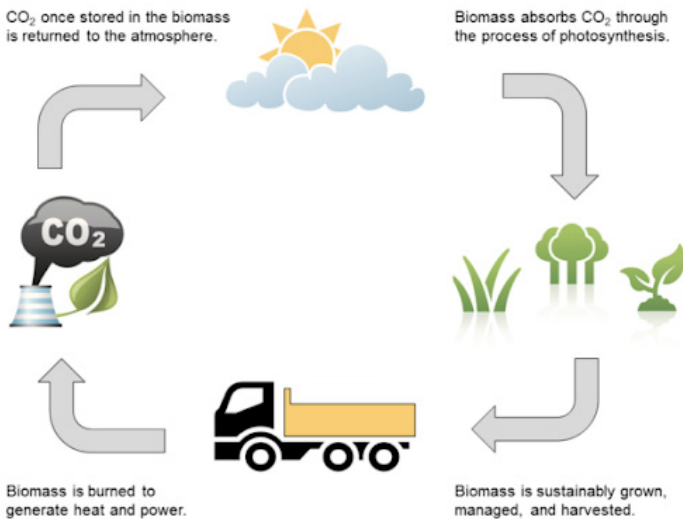


Figure 2. Simplified chart showing the carbon neutral aspect of biofuels from: “Biomass Compared to Fossil Fuels, Solar and Wind.” Viaspace, VIASPACE Giant King Grass, 2020, www.viaspace.com/biomass_versus_alternatives.php

emissions, resulting in little to no additional carbon emissions to the atmosphere. Moreover, biofuels are also derived from safer agricultural material that is used as feedstock in farms. In other words, biofuels can be replenished as needed by growing feedstock on farms, making this resource renewable.

A shift from fossil fuels to biofuels will result in a better environment, thus making it safer for those who work with extracting sources of energy. Between 1990 and 2000 nearly 10,000 former coal miners died as a result of black lung disease, medically referred to as pneumoconiosis (“The Hidden Costs of Fossil Fuels”). This resulted from the harmful chemicals released from the burning of fossil fuels. The byproducts that come from the consumption of fossil fuels are also toxic waste, whereas the byproducts of biofuels are organic and usable. The primary byproduct of fossil fuels is the greenhouse gas that stays in the atmosphere. On the other hand, using ethanol as an example, biofuel byproducts can include corn oil, fiber, and dried distillers grains with solubles (DDG’s) — high protein animal feed. The benefits of using biofuels are worth the change, and they are necessary for today’s society for the health of both U.S. citizens and the Earth.

If biofuels succeed in the market, a lot of people could benefit from their use. The production of biofuels affects the livelihoods of agricultural engineers, plant scientists, and farmers. This can open up a larger market for these professions as well as more job opportunities. Other professions that are involved in biofuels include biophysicists, biochemists, microbiologists, engineering (civil, mechanical, chemical), construction laborers, and industrial production managers. Promoting the consumption of biofuels would also give these workers the help they need to improve the capabilities of biofuels and biorefinery aspects.

SUSTAINABILITY, HARVEST AND YIELD

The foundation of biofuels resides in the constant supply of feedstock as a source. Although feedstock creates a promising future for biofuels, setbacks persist such as the sustainability and yield of the feedstock. However, these fundamental problems can be solved. The United States is currently using biofuels, but the current use does not live up to expectations. The country hopes to have 700 million metric tons annually in two years, but there are too many problems in the system that scientists are overlooking. According to Daniel Inman’s article, “...the sustainability

of harvesting such large quantities of biomass, in terms of soil carbon balance, was not considered... studies suggest that to maintain soil carbon levels, agricultural residues... cannot be removed in large quantities, and in some instances cannot be removed at all” (Inman et al. 563). Essentially, scientists use crop residue as a source to develop biofuels due to the high percent yield the source comes with, but the residue is necessary for the viability of the whole process; if crop residue is used up then it will be much more difficult to even harvest large amounts of biomass. There is an efficient way to solve this problem. Instead of using too much crop residue, it would be better to optimize the use of crop residue in a less harmful manner. According to Inman, “In a study by Pordesimo et al. biomass yields for corn stover were shown to be greatest when harvested at the same time as the grain” (Inman et al. 565). Essentially, the crop residue should be co-harvested along with the original crop used for biomass to best take advantage of the residue’s high percent yield in better moderation.

Additionally, biomass yield is not taken into account when making an estimate of producing 700 million metric tons of biomass. It is essential to improve yield by taking advantage of the key component, which is in the harvest timing. The conventional feedstock system involves a 4-step system for harvesting. The first step is collecting and harvesting the biomaterial. The next step is to store the biomass crops. It is then transported to the biorefinery through trucks. Once it reaches the biorefinery gates, the material is queued for handling. Finally, the biomass is preprocessed. Crop residue alone will not be feasible to produce large amounts of biomass. As explained by Inman, “Harvest management (e.g. harvest timing) has been shown to significantly affect biomass yields in switchgrass, with some cultivars of switchgrass attaining 50% greater yields when harvested twice per season compared with one harvest per season” (Inman et al.564). In other words, it is also critical to use different strategies of harvesting because another big factor in the supply of feedstock is that it is primarily local. Therefore, weather change in the environment increases the likelihood of inconsistencies in supply and quality of the biomass. Some areas may get affected by different levels of precipitation, such as rain and snow, leading to different consequences annually. Aside from unpredictable weather, the essential part of each farm that grows feedstock is their water availability, the variability of which could be a problem. Solving this problem involves selectively choosing the proper method of harvesting depending on the area. Harvests can be

done either once per season or twice. Harvesting twice per season is more fruitful in locations that are less climatically variable. Otherwise, if an area has water availability issues it would be better to use the one-time harvest method. Another important issue to pay attention to is how critical harvesting at the proper times every year can be. According to Inman's article,

Delaying harvest until after a killing frost (late fall/early winter) is common practice for many forage crops. Delaying harvest until spring, however, can have undesirable yield consequences. For example, spring-harvested miscanthus and switchgrass have been shown to have significant biomass yield losses compared with fall-harvested biomass. (Inman et al. 565).

These are problems that can now be solved in the modern day, which would greatly aid the sustainability and reliability of the feedstock system moving forward.

IMPROVING THE SUPPLY SYSTEM

Now that the supply problem has been examined it is time to look at the next important aspect of biorefineries, the facilities where biomass is converted into usable sources of energy (biofuels). There is one major aspect of this that will be focused on: changing the traditional system into an advanced feedstock supply system. The reason for this change is due to the inconsistencies that the traditional system currently faces. Perfecting the biorefinery system will require overcoming the problems stated in previous paragraphs. To recap, the current problems include having a local feedstock supply. This naturally causes supply shortages and too much instability financially, especially when production of feedstock and its harvesting do not always work out according to plan. This makes biofuels look less appealing because it means a higher risk to invest in. Changing the traditional system will reduce these risks. With the improvements made to feedstock quality, changing the system will further reinforce reliability and economic stability.

The traditional feedstock system benefits regions with high crop yields, such as southeast forest lands and even the United States Corn Belt. However, it is difficult for regions that do not normally have high yields. The problem with this traditional approach is that it relies on multiple sources of transportation working together simultaneously (see figure 3).

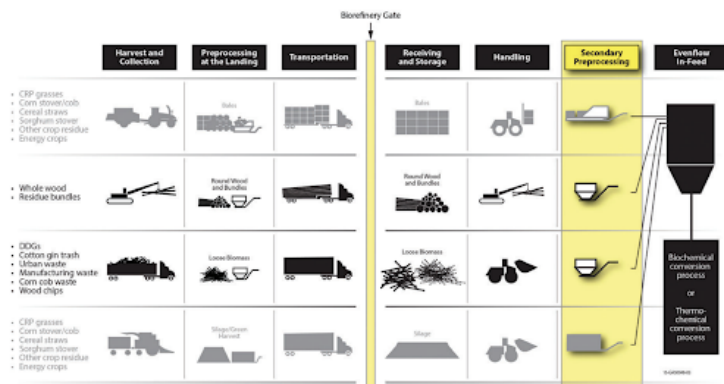


Figure 3. Simplified design of the conventional biorefinery process from Lamers, Patrick, et al.

Judging from the diagram, once the biorefinery gate is passed each type of feedstock undergoes a different process for receiving and storage, handling, and preprocessing. While the conventional process may sound more simple than the advanced process, it really is more complicated and less efficient due to the specific processes of transportation for each material.

Additionally, the biorefineries are forced to adapt to the quality of the feedstock that is local to the area. What needs to be changed is how local the scope of each biorefinery is working in. If produce continues to stay local for biorefineries, it will be too difficult to expand the industry on a large scale. To solve this, a more advanced feedstock supply system must be implemented. Here is a proposal for the schematics of a new system:

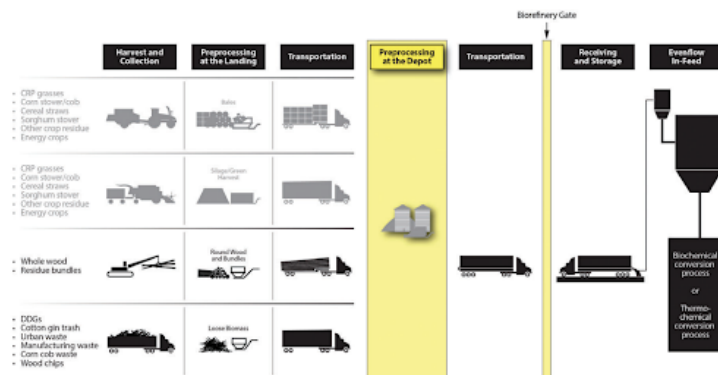


Figure 4. Design for the new supply system from Lamers, Patrick, et al.

This diagram offers a proposition for a new method to replace the conventional system, one where the depots would ultimately open more opportunities for advancing and improving the process in a way that biorefineries nationwide could catch up to. According to Patrick Lamars's article, *Strategic Supply System Design – a Holistic Evaluation of Operational and Production Cost for a Biorefinery Supply Chain*,

...the conventional system relies on existing technologies and agri-business systems to supply biomass feedstocks to pioneer biorefineries and requires biorefineries to adapt to the diversity of the feedstock. On the other hand, the advanced system emulates the current grain commodity supply system, which manages crop diversity at the point of harvest and at the storage elevator, allowing subsequent supply system infrastructure to be similar for all biomass resources. (Lamers et al. 650)

The new system reinforces more quality control on the biomass, so that it can be used in multiple biorefineries. Additionally, using the help of depots, there can be more centralized hubs for transportation to send in and send out produce to be processed in biorefineries. This will help to reduce the risks that take place in individual biorefineries nationwide.

There is an important argument that can be made against this proposal regarding the economics of this supply system. Some argue that changing the system by adding depots will simply result in costing more money, especially when combined with the additional transportation required for this system. The overall logistic prices would increase, which appears to contradict some of the purposes of changing the system. What this argument fails to consider, however, is where this new mechanism also saves money and opens opportunities at other points in the process. A conventional system comes with fewer initial investments, but it takes a toll on efficiency in the long run, as the conventional system requires the biorefinery to adapt to the feedstock supply. Being able to mass-produce biofuels with different types of feedstock supplies using a complex system could open up the doors for larger wide-scale improvements across multiple biorefineries more easily. Financial uncertainty would also decrease with the implementation of a complex system. According to Lamers et al., "... higher initial investments into processing costs (depots) and more transportation activities increase average logistic costs, making a conventional system appear more beneficial. At the same time, [researchers]

also acknowledged that advanced systems entail lower cost variability and would enable other benefits, e.g., economies of scale at the biorefinery” (650). It is important to remember that the biorefinery business is not close yet to being a fully developed industry. There is still more time for it to grow, and it is essential to look into its future. If this industry wants to take big leaps, it can only do so with the expansion of supply and distribution used in biorefineries beyond local boundaries. Further elaborating on this, if the same risks continue to stay in the biorefinery business it will be too difficult for new biorefineries to enter the market. This issue should be seen through a financial lens. The article explains this well by stating the following: “Investment risks increase the cost of capital as investors in bonds and equity require a greater risk premium, directly impacting the weighted average costs of capital (WACC). Feedstock quantity and price variations are commonly identified as a key sensitivity to break-even in biorefinery investments” (Lamers et al. 652). While the biorefinery business is still growing, it would be helpful to keep note of this. According to the article, the proposed advanced feedstock system would help two key aspects of biorefineries with a wider source of feedstock supply: the quantity and price variations. Being more marketable is essential to helping the future of biorefineries.

A good case of a biorefinery done right would be Borregaard, one of the most advanced biorefineries in the world. It is located in Sarpsborg, Finland, and has been successful for over 40 years. Borregaard has withstood a real test of time, being the only biorefinery in Finland that still functions today. It has outlasted biorefineries in multiple different countries including Russia, Switzerland, Sweden, the United States, and even Canada. A research article by chemist Gudbrand Rødsrud discusses the challenges and strategies of Borregaard on its journey to being a successful biorefinery. There are multiple steps that need to be implemented to increase the odds of staying in the biorefinery business, such as full optimization of products to seek the best results.

Borregaard started the production of ethanol using spruce wood as a source of biomass. It operates under a lignocellulosic feedstock system (LCF system), the same type of feedstock most types of biorefineries work under. It uses spruce wood as a source of feedstock to build biofuels. The first step of advice the workers at Borregaard give is to develop as many byproducts as can be made from the biomass. Using the pulp from the wood, a cellulosic paper was being created in the facility, a prime example of a byproduct. While this may seem obvious, it is essential for

biorefineries to stay creative on the co-products that come out of the process, because different lines of products can be driven out of business quickly when demand changes with time. According to the article, “Over the years, the demands in the markets are dynamic. In some periods, one product line is the most profitable, in other periods this product line may be less profitable... From the viewpoint of one product line, there are several strategies to survive market fluctuations in a biorefinery...” (Rødsrud et al. 48). One of these strategies is to build up stock to reduce price fluctuations, thus stabilizing the market. Another strategy is to use substitutes that can serve the same purpose or performance but have different chemical compositions. Then there is the option of combustion to convert products into energy. A biorefinery should be ready to implement multiple strategies at once, because demand is never constant, which means that there may not be much warning before a line of products gets replaced or has no demand in the market. Borregaard also emphasizes knowing just how valuable each product used in each step of the biorefinery is, and organizing their use accordingly. This biorefinery focuses on high-value biomass for products and low-value organic residue for energy. The article states “Wood is likely the most costly biorefinery feedstock and should only be used for the final products while only side streams and other cheap biomass sources should be used for steam production” (Rødsrud et al. 49). Another interpretation of this quote can be made; not only should the products be made from renewable resources, but the energy should come from renewable resources as well. This also better serves the message of biofuels, because keeping energy renewable means fewer fossil fuels used in the process overall, which means being more environmentally friendly.

ENVIRONMENTAL CONCERNS OF THE PRODUCTION PROCESS

The environmental parts of the biorefinery need to be improved in many areas. Aside from being a renewable resource, one of the main goals of resorting to biorefineries instead of fossil fuels is to decrease the consequences that occur to the environment. While biofuels reduce the emission of carbon in the atmosphere as well as greenhouse gases, there are other environmental consequences biorefineries cause. Some of these consequences include increased land use as well as the eutrophication of water. Eutrophication is when too many rich nutrients are dumped in a

body of water causing plant life to thrive, but subsequently becoming fatal towards animal life due to the lack of oxygen. There are multiple types of biorefineries, such as LCF systems, whole-crop biorefinery systems, and green biorefineries. While the green biorefinery does the least environmental damage, the most promising biorefineries follow the LCF system, which is also the most common type of biorefinery, so that will be the type that is examined. The LCF system refers to the type of feedstock supply that is used as biomass to be converted into usable energy. Examples of sources of biomass in the LCF system include dry plant matter such as cellulose and lignins. Identifying what exactly causes the most environmental damage in the biorefinery is not very simple since biorefineries are dedicated to making multiple products in their facilities, so different ingredients are used; however, there are some inputs or catalysts that stay constant in each product formed. Here is a chart of the most important inputs that form many of the products LCF biorefineries complete:

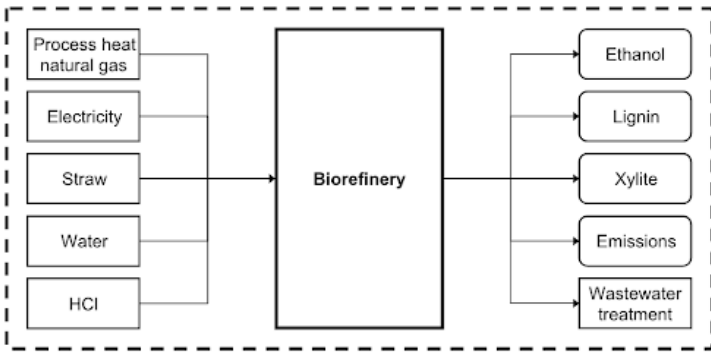


Figure 5. Inputs that enter the biorefinery and products that result from: Uihlein, Andreas, and Liselotte Schebek.

To narrow down the main input that needs to change, the results of the Life Cycle Assessment (LCA) done on biorefineries need to be examined. The LCA is a method used to assess the environmental impacts regarding the stages in making a commercial product. Here is a chart of the results of the average biorefinery’s environmental as well as health impact by way of provision and conversion of materials, known as variant 1 in the study:

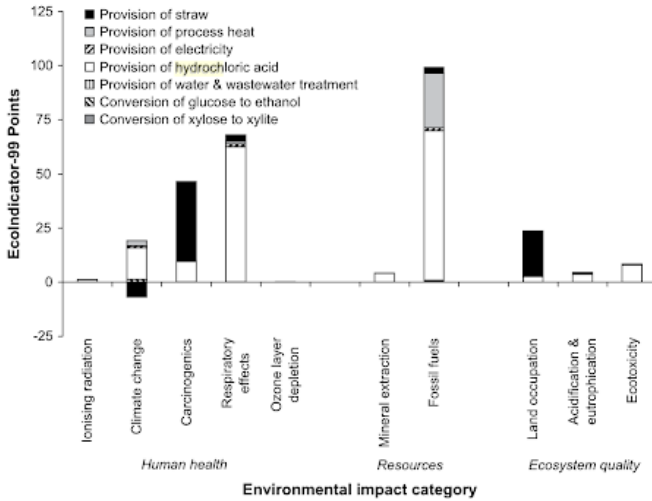


Figure 6. Life Cycle Assessment of Variant 1 of Biorefinery from: Uihlein, Andreas, and Liselotte Schebek.

Three out of the five inputs, hydrochloric acid (HCl), straw, and processed heat, are particularly involved with the environmental concerns that come with using biorefineries. Andreas Uihlein examines the particular parts of the biorefinery that are connected to certain environmental risks in his article Environmental impacts of a lignocellulose feedstock biorefinery system: An assessment, stating

For all impact categories except for carcinogenics and land occupation, the provision of hydrochloric acid accounts for more than 65% of the environmental impacts. Another important process is the provision of straw (carcinogenics 78.4%, land occupation 88.2%). The provision of process heat accounts for 19.5% and 25.3% of the impacts in the categories of climate change and fossil fuel use, respectively. (Uihlein and Schebek 798)

To solve the environmental problems related to HCl, process heat, and straw, the best help would be to use one of Borregaard's strategies. As stated earlier, it would help to use substitutes for the purposes of these products that serve the same purpose with a similar level of performance. The most important part is to have a different chemical composition since the chemicals are what affect the environment. The production of straw and HCl hurts the environment more than any other aspect of the ingredients; however, there are other steps that can be taken. For

instance, a secondary reason for the environmental damage that comes with the usage of straw is the transportation it takes to get to the biorefinery. Because it is packed in low density, there are too many trucks transporting the same produce. With the use of the more advanced feedstock system proposed earlier, fewer trucks would be required to move multiple types of produce at once since they could all be placed into a depot center that resides in the center of multiple localities.

THE PREVENTION, DETECTION, AND MANAGEMENT OF INVASIVE SPECIES

As previously mentioned, land use is a recurring environmental problem with biorefineries. While it may seem obvious that land use comes as a consequence with growing feedstock in farms, modern practices are endangering land beyond where feedstock is being grown, and the consequences can be devastating. Recent studies have shown that alien plant species are being used as supply to build biofuels in newly developed biorefineries, or some old biorefineries have switched their supply to these species as well. An example of this would be the *Arundo Donax*, a type of sprout native to North Africa, Asia, and Europe. The normal materials that these alien species replace include items such as corn and sugarcane. In *Learning from our mistakes: minimizing problems with invasive biofuel plants*, Current Opinion in Environmental Sustainability, professor David Richardson speaks directly on the impacts that these alien species have on the environment:

Many of the alternative non-food plant species currently being developed or under consideration for biofuels are known to be invasive (i.e. they spread from sites where they are cultivated, often resulting in undesirable impacts) somewhere in the world, or are very likely to be invasive if introduced to new regions and cultivated in large numbers. (Richardson and Blanchard 36)

These alien species are dangerous to non-native environments because they tend to be invasive species. Ironically, the traits that make these species invasive happen to be the same reasons why they are sought out to replace the traditional supply. They have quite desirable traits for feedstock use, including the low need for water, abundant seed production, quick growth, ease of establishment, and great environmental resilience. This results in an aggressive species that can thrive more easily in

different climates, but also interferes with the environment that it grows in unnaturally. With their prolific seed production, it becomes difficult to control the spread of different invasive species. Initially, biorefineries stopped the spread of seeds by using seed attacking bio-agents, but this strategy also comes with too many dangers. According to the article, “At present this strategy has limited application since the best bio-control candidates are also implicated in disease transmission, making the risk to commercial forestry too onerous” (Richardson and Blanchard 37). The best method to combat this invasion is to implement multiple strategies of combat at once.

The first step should be prevention by keeping a record of the locations of different species through screening procedures and databases. This way, there will be information on the introduction of new species in an area as well as its neighboring species. Additionally, it is critical to control the land spaces; the plantations, both regionally and nationally, should be distanced strategically to prevent the spread of different species across localities or remote environments. The next step should be detection and a quick response, once there is information on the entrance or movement of an alien species, other biological tools should be implemented to produce sterile plants, consequently helping to control reproduction. Finally, the last step should be to focus on the long-term management of the species. Constantly monitoring the movement of a species will help decrease outbreaks into new environments, which will give time to fully eliminate non-native species.

Some may wonder why go through all this trouble to eliminate an invasive species when they are helping the cause of biorefineries, both in terms of financial costs as well as supply? However, their usefulness is only temporary; history has shown that alien species only tend to remain useful for a certain period of time before being rendered fruitless. According to the article, “... ‘wonder crops’ soon lose their appeal and become pests for the very reasons they were initially chosen” (Richardson and Blanchard 41). Once they become pests, which they are likely to become, they will presumably be disposed of without second thoughts. What they do to the environment, however, can be catastrophic if too much time is given for them to thrive in all types of climates.

CONCLUSION

Both environmental and economical improvements must be done for biofuels to thrive in the years moving forward. The biofuel industry

does not often come into casual conversation for renewable alternative sources of energy to replace fossil fuels, yet it should be discussed more for the uses it can serve that other forms of energy cannot perform, including wind and water energy. The chemical industry as well as, to a smaller extent, the fuel industry will have to depend on biomass in the near future for an alternative when fossil fuels go extinct. To ensure great results with the responsibilities biofuels must uphold, the feedstock crops must be harvested strategically depending on the climate and area, with a focus on expanding the scope of the source of feedstock supply with fewer risks involved in the process to help marketing. Additionally, substitutes for particular products such as HCl and straw to help reduce environmental risks should be used while avoiding the commercial use of alien plant species due to the short-term use long-term environmental damage. With dedication and consistent effort, the benefits of biofuels will soon outweigh the benefits of fossil fuels, proving themselves to be a sustainable and reliable alternative. We must focus on the shift from fossil fuels now, before we cause any more damage to the environment and ultimately the world we live in, and hopefully, biofuels will soon be capable of making the transition.

WORKS CITED

- Bentivoglio, Deborah, and Michele Rasetti. "Biofuel Sustainability: Review of Implications for Land Use and Food Price." *ResearchGate*, Rivista Di Economia Agraria, Jan. 2015, www.researchgate.net/publication/308718566_Biofuel_sustainability_Review_of_implications_for_land_use_and_food_price.
- "Biomass Compared to Fossil Fuels, Solar and Wind." *Viaspace*, VIASPACE Giant King Grass, 2020, www.viaspace.com/biomass_versus_alternatives.php.
- Inman, Daniel, et al. "Feedstock Handling and Processing Effects on Biochemical Conversion to Biofuels." *Wiley Online Library*, Society of Chemical Industry and John Wiley & Sons, Ltd, 15 Sept. 2010, onlinelibrary.wiley.com/doi/full/10.1002/bbb.241.
- Lamers, Patrick, et al. "Strategic Supply System Design – a Holistic Evaluation of Operational and Production Cost for a Biorefinery Supply Chain." *Wiley Online Library*, Society of Industrial Chemistry and John Wiley & Sons, Ltd, 20 Aug. 2015, onlinelibrary.wiley.com/doi/full/10.1002/bbb.1575.
- Richardson, David M., and Ryan Blanchard. "Learning from our mistakes: minimizing problems with invasive biofuel plants, Current Opinion in Environmental Sustainability." *Current Opinion in Environmental Sustainability*, Volume 3, Issues 1–2, 2011, Pages 36–42, <https://doi.org/10.1016/j.cosust.2010.11.006>.
- Rødsrud, Gudbrand, et al., "History and future of world's most advanced biorefinery in operation." *Biomass and Bioenergy*, Volume 46, Nov. 2012, Pages 46–59, <http://www.sciencedirect.com/science/article/pii/S096195341200164X>

- “The End of Fossil Fuels.” *Our Green Energy*, Ecotricity, 2018, www.ecotricity.co.uk/our-green-energy/energy-independence/the-end-of-fossil-fuels.
- “The Hidden Costs of Fossil Fuels.” *ucsusa.org*, Union of Concerned Scientists, 30 Aug. 2016, www.ucsusa.org/resources/hidden-costs-fossil-fuels.
- “The High Cost of Fossil Fuels.” *Environment America*, 30 June 2009, environmentamerica.org/reports/ame/high-cost-fossil-fuels.
- Uihlein, Andreas, and Liselotte Schebek. “Environmental impacts of a lignocellulose feedstock biorefinery system: An assessment.” *Biomass and Bioenergy*, Volume 33, Issue 5, May 2009, Pages 793-802, <http://www.sciencedirect.com/science/article/pii/S0961953408002572>

Paulina Gutowski

Mindfulness of Meat-Eating

ABSTRACT

As evidence against the benefits of meat-eating continues to grow, many people are questioning the ethics of meat consumption. Raising animals for meat contributes to climate change, is a source of animal cruelty, and can lead to health risks. This paper aims to determine the psychology of people who choose to consume meat. Specifically, this paper will examine how the mind utilizes cognitive dissonance and other psychological phenomena to combat the conflicting values in an individual who consumes meat. In this research, cognitive dissonance is defined as the ability to believe in two contradictory ideas, which are usually related to one's choices and decisions. To test these phenomena, this paper will examine interviews along with three studies that investigate these processes in the real world. The research shows that people have higher levels of cognitive dissonance when they encounter damaging information about meat-eating and when their cultural values are challenged. These findings suggest that individuals are aware of the immoral side of meat-eating, but their minds put up barriers, -dissonance- to prevent these moral obligations from reconstructing their lives.

INTRODUCTION

Meat consumption has been integral to the process of human evolution for thousands of years. For a long time, humans venerated animals for the sustenance they provided. However, the practice of animal veneration dissipated with technological advancements in agricultural and meat production. The mass consumption of meat contributes to psychological processes such as dementalization and cognitive dissonance. These processes act as a psychological wall that minimizes the moral conundrum of killing animals for mass consumption. Given the growing body of evidence that challenges the benefits of eating meat, it is also important to examine the psychological dynamics that contribute to mass meat consumption. Accordingly, this paper will examine the psychological justifications of eating meat and what effect this has on a person's moral compass.

The following section of this paper will examine the history of

agriculture and animal domestication, which will be followed by an explanation of the role of individual morality. This paper will then address three studies that examine the psychological processes of demoralization and cognitive dissonance and how that can influence meat-eating as lifestyle choice. The final section of this paper will discuss the moral conundrum of meat-eating. The stigmas surrounding meat cultivation and consumption morally divide the mind. However, psychological processes, such as cognitive dissonance, demoralization, and willed blindness, protect the psyche from acknowledging the discordance between belief and behavior.

THE PSYCHOLOGY OF FOOD PRODUCTION

To understand the psychological effects of the advancements in agricultural and meat production, a brief history of agriculture is necessary: Shawn McKenzie, a program officer for UNICEF, presents a timeline of human agricultural practices. Early humans survived based on a nomadic hunter-gatherer lifestyle. The constant upheaval and instability of having to move when the animals moved did not provide viable conditions for raising large families. Agricultural methods were adopted, and permanent settlements were established thus providing for larger populations. People began to grow food, domesticate animals, and live in settlements; this marks the beginning of the Agricultural Revolution. As farms and settlements expanded, people needed more efficient tools to support the demands of the people and the farm. The first tools were horse-drawn plows and seed drills, but not long after people created more advanced tools to maintain the exponentially growing population. These tools, along with transition from horsepower to steam power and the invention of the steel plow, marked the advent of the Industrial Revolution. This era brought about “mechanized farm equipment, expansion of farm size, and a decline in the number of farms” (McKenzie, 17). However, the Industrial Revolution is seen as the last positive evolution as with each new revolution in food production, the industry became more commercialized. With modern industrial agricultural practices raising alarm due to their large-scale monoculture, heavy use of chemical fertilizers and pesticides, and meat production in CAFOs (confined animal feeding operations), people are more conscious about the origins of their food (McKenzie, 19). The morality of CAFOs, more commonly known as factory farming, is an issue that meat and non-meat eaters have actually been able to find com-

mon ground on. Dominique Lestel, a self-proclaimed “ethical carnivore,” believes that vegetarians and vegans are actually the ones discriminating against the animals. In her book, *Eat This Book: A Carnivore’s Manifesto*, Lestel claims that “The carnivore is sometimes closer to animals than a vegetarian can ever be because she completely accepts (i.e., accepts metabolically) her animal nature rather than being disgusted with it” (Lestel, xx). Humans have evolved from animals and have depended on animal sustenance for this evolution. By denying their animal nature and taking the “moral high ground,” vegetarians are putting themselves in a position of superiority which is exactly what they claim to be fighting against. To accept the metazoan self, the animalistic self, is to accept the cycle of “generations and destructions” that humans and animals share (Lestel, --). This embrace of the constant cycle of life and death of living things is best seen in indigenous groups, such as the Algonquins. The Algonquins accept the metazoan cycle of life and, “they do so in a spirit of reverence and sincere thankfulness” (Lestel xiii). By not venerating themselves and accepting being one with nature and what it provides, the Algonquins live their belief that the carnivore is more equal to the animal. This reverence of animals can be characterized as sacred, which elevates the carnivores’ relationship to the animals over the vegans. Meat-eaters and plant-eaters may have different views on their ethical responsibilities to animals, however, both parties agree that industrial agriculture can be irreversibly damaging and that factory farming is morally unjust.

To further understand the ethical dilemma that comes from eating meat, one has to understand the power that internal moral systems have on individual psychology. Moral convictions are the beliefs that one follows and are represented in the mind as non-negotiable truths or facts. Feinburg illustrates that “In the same way 2 plus 2 equals 4 and not 5, we experience moral convictions as inherently right or wrong” and that these inherent beliefs are seen as “universally applicable” (Feinburg, 50). These beliefs can be strong enough that they bind similarly minded people together to form cultures and societies. The influence that morals have on an individual and his social behavior is so profound that any diversion from one’s own truths can lead to, “stigmatization, dehumanization, and even aggression” (Feinberg, 50). These volatile behaviors are attributed to the significant link found between emotions and morality. For example, “the more disgust an individual experiences in response to a morally questionable behavior, issue, or policy, the more likely that individual will view it in moral terms” (Feinberg, 51). These moral terms are unique as

everyone has their own emotional triggers, however, because of the power of morals, people cannot accept behaviors that stray from their own beliefs. That is why when individuals behave in a way that goes against their morals, the mind shields the aggression and shame from immobilizing the psyche. Because animals elicit such compassionate emotions in humans, there is bound to be a moral link between behavior and animals. Elliot Turiel, a psychologist and Chancellor Professor at the University of California, Berkeley, notes that imbuing something with moral properties and placing it on the moral spectrum depends on the premise of harm. If an act might harm others, it is placed into the “moral domain” (Turiel, 34). What individuals hold in their moral domains are paramount to their sense of self and moral identity. Any conflict with one’s identity sends the human mind into severe distress. This is where the moral dilemma of animal consumption comes in. Since animals stimulate such emotional responses from people, they are considered to be morally moving. When an individual comes into contact with information that animals are being harmed for food, it triggers the mind’s moral values. However, because an individual may enjoy the food produced from the animal, this creates conflict in the mind. To avoid this conflict, every time an individual has to make a choice of what to eat, the mind facilitates psychological processes such as dementation, cognitive dissonance, and willed blindness to protect it.

PSYCHOLOGICAL RESPONSES TO MEAT-EATING

Dementation, cognitive dissonance, and willed blindness are all mechanisms employed by the mind to justify going against a person’s own moral instincts. Dementation, in the context of justifying meat-eating, is the practice of belittling the mental capacities of animals to justify their slaughter and consumption. In this sense, denial and disengagement are protections against moral hypocrisy. As Albert Bandura writes, this denial of mind is most likely to occur when we feel responsible for the harm caused to others facilitating moral disengagement (Bandura, 193-207). As a result, the individual engages in cognitive dissonance, or the belief in two contradictory ideas. Since cognitive dissonance adds stress to the mind, people are “willfully blind” to the contradictions in their internal morality (Gjerris 525). Brock Bastian, an Associate Professor in the School of Psychological Sciences at the University of Melbourne, and his colleagues, performed three experiments to

prove how the mind reacts psychologically when a person eats meat. The first experiment examined the process of dementalization. A sample of 71 first-year psychology students were asked to rate 32 animals. Researchers selected animals based on varying rates of human consumption and their similarities to human mental abilities. The students were asked to rate the animals based on the animal's mental capabilities with the sub-question of "*would you eat this animal*"? At the end of the questionnaire, students were also asked to indicate if they were vegetarian and if so, their answers were excluded. The findings supported the hypothesis of dementalization by showing that "Animals considered appropriate for consumption were rated as having less mind than animals considered inappropriate. In addition, the extent to which an animal was thought to possess mind was associated with how deserving of moral treatment it was considered" (Bastian, 250). This supports the claim that in order for a human to be able to consume animals without feeling guilt, they have to dementalize or depreciate the mental abilities of that animal. This process of dementalization can be seen most vividly in the pig versus puppy debate. Because dogs are the world's best friend and they form such strong bonds with humans, the thought of eating a dog evokes outrage and disgust. However, when people think of consuming pigs, they do not imagine that they could form bonds with them or that pigs have emotional capacities or because pigs are thought of as sluggish, dirty, and unintelligent animals. It is even a vulgar insult to call someone a pig! What many people do not know is that "pigs possess complex ethological traits similar, but not identical, to dogs and chimpanzees" (Marino and Colvin, 15) in areas such as cognition, emotion, and behavior. The contrast in conduct towards pigs is dementalization in action. This is just one way the mind rationalizes a person's choice to eat meat to avoid scrutiny and criticism.

Bastian's second study examined the connection between dementalization and cognitive dissonance. The researcher's aim was to test whether participants would deny the mental abilities of animals when they knew that the animals could suffer. The participants were given information describing the living conditions of cows and sheep in varying details, ranging from free-range to butchered. Then the participants were asked to rate the mental capabilities of either the cows or sheep. Once again, the participants were more prone to deny the mental capabilities of animals when they were reminded that the animal was being bred to be killed than when they were not reminded. This denial allows for humans to protect their moral self-concept while engaging in behaviors directly

contradicting it. People's actions are regulated by their self-consciousness and "self-deception serves to suppress negative self to maintain high moral self-concept" (Hui, 845). By justifying their actions, people do not compromise their identities and maintain their self-concept as moral, essential members of society. This contradiction in beliefs that the study unveils is universally known as the meat paradox. The meat paradox is a "discrepancy between behavior and attitude that leads to inner conflict," and pertains to individuals who "like to eat meat but [who] do not want to be connected with morally troublesome aspects of it" (Buttler and Walther, 152-153). Therefore, by denying the mental abilities and emotions of an animal, one lessens the dissonance they feel within themselves. Another way for people to cope with the meat paradox is to turn to a plant-based diet. Christopher Hirschler interviewed thirty-two vegans to determine their reasoning for their lifestyle change, their motivation to persist with their lifestyles, and the impact it has had on their lives. One of the most compelling interviewees was Dwight, a 68 year old former farmer and feedlot operator and sixteen year vegan. Despite being responsible for the deaths of thousands of animals, in his interview he showed his commitment to animals by relaying a graphic dream: "A man was holding a gun to my head, and he was holding a burger in his other hand. he said, 'Eat it, or I'll pull the trigger!'"...he told the gunman, 'You better pull the trigger'" (Hirschler, 165). Dwight's story proves that for some there is no cure or coping for cognitive dissonance other than a lifestyle change because "When individuals engage in thoughts or behaviors that trigger these emotions, they are more likely to make negative moral judgments about themselves, which compels them to make changes so they live up to their own moral standards" (Feinberg, 51). Because Dwight was so involved in the suffering of these animals, it was impossible for him to dissociate the cow he butchered from the beef that was on his plate. This lack of dissonance in Dwight means he felt constant shame and guilt for going against his morals. The only solace was a change in diet. Others that are not as involved in the cultivation of meat have an easier time disconnecting the idea of animals from food. For example, in Hirschler's interview with Linda, a 48 year old dietician, she admits that "I had never really thought of myself as being responsible for the animals that I was buying at the grocery store. I had divorced myself from that thought a long, long time ago" (Hirschler, 161). The "divorce" that Linda is referring to is exactly the dissonance that was discussed prior in the study and in this paper. This dissonance allows Linda to hold two contradictory ideas

in her mind without severe distress to her sense of self. That separation is a way of protecting her beliefs and mind from contradiction and hypocrisy. However, just as in Dwight's case, there comes a point where the brain can no longer prevent such conflicting information from permeating the rest of the psyche. Once the mind absorbs this information and is anguished by the conflict, a person must make the choice to either change one's morals or change one's way of life. It is not so simple for people to change their moral ideologies. A lifestyle change is the most effective way to ease the inner mental conflict.

The final study conducted by Bastian and his colleagues tests the direct link between the behavioral and cultural commitment to meat-eating with motivating dissonance. This study examines how individuals mentally disassociate their behavior from the harm that it causes to animals. Researchers assigned different groups of people to write about different topics. The first group wrote about the process of preparing a cow and a sheep for food and then they ate fruit. The second group wrote about the same process but sampled meat afterward. Finally, the third group wrote about the process of fruit production and then ate fruit. The researchers found that there was a direct connection between behavior and cognitive dissonance. Individual mental dissonance was most significant in the group that wrote the process of meat production and then had to sample meat afterward. This research supports the claim that, "this denial was only significant for participants who were told they were going to sample the food animal's meat...by denying minds to animals, people bring their cognitions in line with behavioral commitments, facilitating effective and unconflicted action" (Bastian, 253). Because morals are significant to a person's wellbeing and are threatened when faced with ethical challenges, the mind seeks ways to protect itself by separating humans from animals. When people devalue animals, they seem more edible. Behavioral commitments and moral self-concept are another part of the meat consumption debate. An individual's identity is a product of their inherited culture, and for many, eating meat is an integral part. Therefore, coming into contact with information that challenges one's heritage would be taken as an attack on one's identity. For example, the Jewish and Muslim communities both partake in ritual slaughter, however, a devout Muslim or Jew that finds the ritual immoral will struggle with his own moral convictions and sense of self. Dr. Mark Alicke, a professor at Ohio University, writes that "when individuals engage in behaviors that contradict their moral identity or if they fail to engage in behaviors consistent

with their moral self-concept, they will experience significant dissonance that motivates a realignment between behavior and identity” (817). To avoid this realignment and discord with tradition, people rationalize and justify their actions in order to maintain their self-concept. It is one thing to question one’s morals, but to defy an entire culture or religion for the ethics of eating meat is an argument that the mind does not even allow one to comprehend and is extremely difficult to justify. In Hirschler’s interview with vegans, the most common impact of a vegan lifestyle was that, “Interactions with family members were described as being more negative and difficult” (Hirschler 162). A person’s family represents his background, culture, traditions, and defines who he is. This conflict with familial and cultural traditions can leave a person feeling alienated and rejected. Because values and beliefs are crucial to identity, many people perceive that a change in diet is not worth the social consequences. Given that humans are social animals, their perception of their social image motivates their behavior. Collective forces in a society have a great impact on an individual’s actions. People do not want to be ridiculed or mocked if their beliefs go against the norm. In his interviews with vegans, Hirschler found that constant scrutiny was a common impact of the vegan lifestyle. In one interview, 52 year old Greg shared his feeling that “You’re under this little magnifying glass because you’re different from the mainstream” (162). The psychological impact of “being different” is distressing to the mind and prevents many people from switching to a plant based diet. Since humans are social creatures, their outward image is important in a society where stereotypes and stigmas carry a lot of weight. Vegans do not have a positive reputation in the cultural mainstream which further deters conversion. People do not want to be perceived as whiny, sensitive in their social and cultural circles so they further enable dissonance in their mind.

CONCLUSION

There are many psychological factors that prevent people from switching to a plant based diet regardless of the facts presented to them. The stronghold that morals have over human mental health ensures that the mind has loopholes in place in case morals come into question. The loopholes of demoralization, cognitive dissonance, and willful blindness allow for individuals to have contradictory opinions without mental distress. Individuals who eat meat do not feel the need to switch to a plant

based lifestyle because their mental processes prevent internal moral problems from arising within their psyches. Sociological processes are a second barrier of protection against converting to a plant based diet. Humans are social animals and their appearance in society is valued, therefore their minds will not allow them to jeopardize their character through the eyes of others. Collective traditions prevent individuals from going against their cultural norms in order to protect their minds from severing from their sense of self. An individual's identity is all that one is and all that one has, so to preserve one's sanity and one's self, the mind blocks out any dilemmas or contradictions that impact that identity. The morality of eating meat is a contradiction that the mind does not want to acknowledge or recognize, so it dismisses it through dissonance. Given all the individual and social psychology forces at play, it is not likely that meat consumption will subside any time soon.

WORKS CITED

- Alicke, M. D., Klotz, M. L., Breitenbecher, D. L., Yurak, T. J., & Vre-denbug, D. S. (1995). Personal contact, individuation, and the better-than-average effect. *Journal of Personality and Social Psychology*, 68, 804–825. <http://dx.doi.org/10.1037/0022-3514.68.5.804>
- Bandura, Albert. "Self-Deception: A Paradox Revisited." *Behavioral and Brain Sciences*, vol. 34, no. 1, 2011, pp. 16–17., doi:10.1017/s0140525x10002499.
- Bastian, Brock, et al. "Don't Mind Meat? The Denial of Mind to Animals Used for Human Consumption." *Personality and Social Psychology Bulletin*, vol. 38, no. 2, Feb. 2012, pp. 247–256.
- Buttler B, Walther E. Measuring the meat paradox: How ambivalence towards meat influences moral disengagement. *Appetite*. 2018 Sep 1;128:152-158. doi: 10.1016/j.appet.2018.06.011. Epub 2018 Jun 7. PMID: 29885387.
- Eggleston, S. J., and Elliot Turiel. "The Development of Social Knowledge. Morality and Convention." *British Journal of Educational Studies*, vol. 33, no. 2, 1985, p. 186., doi:10.2307/3121515.
- Feinberg, Matthew, et al. "Understanding the Process of Moralization: How Eating Meat Becomes a Moral Issue." *Journal of Personality and Social Psychology*, vol. 117, no. 1, 2019, pp. 50–72., doi:10.1037/pspa0000149.
- Gjerris, Mickey. "Willed Blindness: A Discussion of Our Moral Shortcomings in Relation to Animals." *Journal of Agricultural and Environmental Ethics*, vol. 28, no. 3, 2014, pp. 517–532., doi:10.1007/s10806-014-9499-6.
- Hirschler, Christopher A. "What Pushed Me over the Edge Was a Deer Hunter': Being Vegan in North America." *Society & Animals*, 2011.
- Lestel, Dominique. *Eat This Book: a Carnivore's Manifesto*. New York: Columbia University Press, 2016.
- Lu, Hui Jing, and Chang, Lei. "The Association between Self-Deception and Moral Self-Concept as Functions of Self-Consciousness." *Personality and Individual Differences*, vol. 51, no. 7, 2011, pp. 845–849., doi:10.1016/j.paid.2011.07.014.

- Marino, L., & Colvin, C. M. (2015). Thinking Pigs: A Comparative Review of Cognition, Emotion, and Personality in *Sus domesticus*. *International Journal of Comparative Psychology*, 28.
- McKenzie, Shawn. "A Brief History of Agriculture and Food Production: The Rise of 'Industrial Agriculture.'" <https://resources.saylor.org>, 2007, resources.saylor.org/wwwresources/archived/site/wp-content/uploads/2015/07/EN-VS203-7.3.1-ShawnMackenzie-ABriefHistoryOfAgricultureandFoodProduction-CCBYNCSA.pdf.
- Turiel, E. (1983). *The development of social knowledge: Morality and convention*. New York, NY: Cambridge University Press.

Tara Krishna

Finding Feminism in Addiction Recovery

ABSTRACT

Women and addiction in the United States have a contentious history. Largely barred from medical studies, treated as criminals, and looked down upon as a societal and moral issue, women who are addicted to and chemically dependent on controlled substances have suffered immensely through biases in effect by both law and illegitimate practices. Women are different from men, just as much as women differ from each other. They have needs that are largely ignored in a society that models its research, practices, and laws on men: the baseline patient. This paper will address women's history with addiction as well as the gender-specific issues they face that negatively affect their treatment and recovery. Bias is one factor preventing empathy for women who are dependent upon controlled substances, but the integration of a feminist framework that allows for equality in treatment will be able to bridge the gap in patient care and truly help women recover. This paper will also explore how combatting the male-baseline with a feminist framework is conducive to establishing a humane, empathy-driven outlook prioritizing women's health—where essentially, a holistic treatment centered on differences rather than a baseline creates more inclusive thus effective care. This empathy-driven treatment is contingent on holistic patient viewpoints that take into account the lives women face, outside of just her gender. A feminist framework that focuses on women can be utilized to successfully help women who are addicted to reach recovery by addressing the issues that women are subjected to.

INTRODUCTION

For years, there has been a stigma attached to recreational drug use and those who engage in it. Women who are addicted have suffered from this bias in particular, preventing effective treatment. Thus, the recovery system in America is inherently flawed when treatment is not given freely to those who are suffering. The myriad of women's testimonials depicting their battle with addiction and how they fall through the cracks while trying to recover attests to this issue. In "I Didn't Know About Addiction or Mental Health," an episode of Matt Sheb's podcast *Stories of*

Recovery, a successful alumna of a recovery center explained her path towards recovery from addiction, something that greatly altered her life at 14 years old. She maintained that her responsibilities as a mother and wife were affected as she relapsed into drug addiction. Thus, gender must be a significant factor in the way rehabilitation efforts work to effectively treat women struggling with substance use disorders--these are women who are addicted. Women's history with addiction is riddled with outside forces controlling their medical lives, and women today can be seen to suffer immensely from mental health issues leading them to find a way to cope with the stressors of life. Bias that is societally prevalent enhances the stressors, and current treatments that work within the framework of this structural and institutional bias are not effective. This essay will explore how a feminist framework that combats the androcentric view of rehabilitation can establish a humane, empathy-driven outlook prioritizing women's health. Such a framework can be utilized to successfully help women who are addicted by addressing the specific issues they face during the recovery process. It is imperative that steps must be taken to properly address the treatment of addiction, with a focus on women in particular in order to mitigate this gap in rehabilitation and to get them the help they need.

WOMEN'S HISTORY WITH ADDICTION

The history of women's addiction can be traced back to the common practice of male doctors abusing their power of prescription. Since the 1800's, women have been the victims of lenient male physicians who have left them predisposed to addictive behaviors and reinforcement of them. In fact, "[w]omen's dependence on doctors has been a key factor in their addiction; this is evident in patterns of prescription of alcohol for women (common in the 1800's); opium (1800's); cocaine (late 1800's/early 1900's); barbiturates (1950's onward); amphetamines, tranquilizers and sedatives (1960's onward); and antidepressant drugs today" (Kruk et al.). Essentially, there is a historical link between women who are addicted and male doctors who pushed them to take medication to cope with mental or physical health issues. These women suffered immensely as they had to endure addiction, a debilitating disease, on top of other mental health or medical issues they were seeking treatment for.

Not only are women historically impacted by men who catalyze their addiction, but they are also affected by their inability to cope

with stressors in healthy ways due to a variety of internal and external constraints relevant in both the past and present. For instance, there are both internal and external barriers women have historically faced that are analogous to present day barriers. According to a framework devised by LJ Beckman, these internal barriers include “denial and minimization, fear of stigmatization, concern about leaving or losing children, and guilt and shame” (qtd. in Kruk et al.). This denial and minimization culminates in the way the woman herself will minimize or reduce a problem that is affecting her—essentially denying that there is a real problem in order to cope. The weight of losing a child is akin to a loss of their identity and responsibility, which ultimately may reveal feelings of guilt and shame when they are unable to provide for their child. Similarly, “[e]xternal barriers include interpersonal (the most significant being opposition by family and friends), and structural factors” (Kruk et al.). Interpersonal problems arise when there is judgment cast upon the woman in her chemical dependence, and the absence of a true support system without resources can create inefficient progress; the guilt and shame enforced onto them by those with whom they are in interpersonal relationships create more stress in a woman’s life. The structural factors also indicate an intersection of gender and class, wherein some women simply do not have the economic means or knowledge of how to access help in a hospital or clinic setting. The way women are socialized through these historical means predisposes them to negative affect when seeking treatment. Ultimately, it is clear there is an unmet need in maintaining that women are treated with genuine, effective treatment to promote their recovery—thus, the barrier to accessing treatment is a necessary hurdle to overcome, but progress cannot simply stop there—the treatment itself must be evaluated as well.

ESTABLISHMENT OF BIAS AGAINST WOMEN

The clinical gaze is a stigmatizing form of bias that prevents women from reaching better care--present in both research and clinical practices. While there has been an uptick in research focusing on neurological factors influencing addiction over the last few decades, “the dominant perspectives in the majority of alcohol and drug use(r) research in the USA... viewed alcohol and drug consumption primarily from a male point of view” (Hunt et al.). There exists a strong bias against women who are addicted. The needs of women are not considered because addiction is

viewed as a man's issue; with representation in popular media through the popularization of mainstream Christian-based programs like Alcoholics Anonymous, male patients are presented as the primary figures receiving treatment. The lack of female representation in addiction studies culminates in major issues preventing the successful recovery of such women. This implies diagnosis and treatment itself will be impacted in a clinical setting if physicians utilize the male-centric framework in place. In fact, it should be noted, "Faulty clinical reasoning has been observed in most diagnostic errors... doctors' emotions may play a role in causing reasoning flaws" (Mamede et al.). Mamede indicates that the medical community's bias--in the form of diagnostic error from personal beliefs--prevents effective care. When women who are addicted are assumed the role of a "disruptive patient" in the physician's view, this stigmatization hampers women's recovery when they are not given the respect that they deserve as a patient. The effects of drug addiction research excluding women culminate in the long-term, where bias prevails in both how people view women who are addicted, as well as determine the treatment they are able to receive.

Moreso, the rhetoric that the US criminal system enforces is a key instigator of bias, where criminalization over recovery funnels women who are addicted into a cycle of addiction, thus carrying a stigma of criminality. Drugs that are considered controlled substances and incur criminal prosecution are classified under schedules, or different classifications ranging from Schedule I-V, according to their abuse potential and degree of psychological or physical dependence (United States Drug Enforcement Administration). Such examples of illicit drugs include heroin, cocaine, and fentanyl. Laws against illicit substances have a diverse range of interpretations, and the decision of whether a defendant receives punishment or treatment is left to the subject of a court judge. In a recovery alumnus' story on "I Didn't Know About Addiction or Mental Health," the alumnus stated she was on trial for drug possession charges, and a newer, more lenient judge gave her an ultimatum of either prison or an addiction rehabilitation center (Sheb). She chose the addiction rehabilitation center. However, had a different judge been present, the alumnus reveals her fears on how she may have been sent to prison--a system lacking social support--instead of the treatment facility that set her up for success. Incarceration for drug-related offences within the United States have affected 7.1 million adults; meanwhile, "the large increase in the criminal justice population reflects in part tougher laws and penalties for

drug offenses” (Chandler et al.). According to Chandler et al., the population of people requiring treatment but are unable access it will increase as stronger laws against drug use and distribution become stricter with legislation. Thus, empathy is required to properly address care and recovery when facing addiction, not being treated as a criminal. This is especially true with women who are morally judged in a different way than men, and who face traumas in a different way than men. When gender is considered, treatment that can adequately meet the needs of a woman will provide for better recovery overall.

SEXUAL DIFFERENTIATION OF ADDICTION: BIOLOGICAL EFFECTS, MENTAL HEALTH, AND BEHAVIOR

Compared to men, women are more susceptible to factors that trigger relapse (Hunt et al.). Due to the power imbalances in social structures within our patriarchal society, traumas that women are more at risk from affect how they respond to addiction. As such, one must “emphasize the importance of considering the effects of both macro- and meso-level factors, specifically poverty, trauma, violence, and family abuse, in shaping these young women’s perception” (Hunt et al.). As women face different dangers than men in a society that is gendered and unequal, the effects of being a woman and what she endures as a woman can significantly alter her addiction in a very specific way. Abuse history is a particularly important factor that leads women to self-medicate and become addicted to illicit substances. In “Stories of Recovery,” the successful alumna’s lengthy history with addiction had stemmed from her growing up in “an alcoholic, abusive household” as a child (Sheb 14:20). Her history and the environment she grew up in affected her life course, where ultimately she developed an addiction herself. This is not surprising, considering that “[r]epeated drug exposure in individuals who are vulnerable (because of genetics, or developmental or environmental factors) trigger neuroadaptations in the brain that result in the compulsive drug use and loss of control over drug-related behaviors that characterizes addiction” (Chandler et al.). Women are vulnerable individuals who are marginalized in societies that do not consider them to be the norm. This marginalization is both a developmental and environmental factor that definitively alters brain anatomy, which can influence the response to addiction itself. Thus, women experience drug usage and consequent addiction in a differ-

ent way than men.

Furthermore, the real-time consequences of addiction in women are relayed through correlational and causal effects that stem from stressors particular to women. Women who are chemically dependent on illicit substances deal with a litany of mental health issues pushing women into addiction faster. One study concluded, in regards to people who are addicted, that “women had greater family/socioeconomic problems, more physical and sexual traumas, three times the rate of PTSD, and twice the rate of any anxiety disorder, compared to men. On the ASI, women were more severe on nearly every problem area (medical, psychiatric, social, employment)” (Najavits et al.) Thus, while the number of women who abuse controlled substances is less than that of men, they develop addiction through a telescoped course, progressing more rapidly towards addiction. In fact, according to the recovery alumnus’ narrative, after being drug-free for years, she relapsed after facing intimate partner violence. She asserts “I was beat really badly, [her husband] went to jail, and I went to work, black and blue... someone in housekeeping said, ‘You look like you really need a line’ and I did it and I was back to my old life by end of the week” (8:40). Her relapse process was engendered by the violence she faced at the hands of her husband, and she used drugs as a way to cope with the pain—self-medicating thus becomes a secondary issue to the main concern of abuse and trauma leading women to addiction and relapse to assert some form of control in their lives. This indicates that underlying mental health issues engender risky behavior—which thus leads to using drugs as a tool of self-medicating because of the high number of problems women face in their position in life. Women have needs that the typical rehabilitation models do not take into account, as such severe mental health issues stemming from traumas is significantly higher in women who seek treatment compared to men. Certain life events that are relevant to women, such as menstrual cycles and birth of children, impact the body differently from men because of the norepinephrine regulation that may increase the stress effect and increase the drug cravings that women who are dependent on drugs may have (Fox et al.). Furthermore, “studies show robust sex variation in the stress- and cue-induced craving state with women generally reporting significantly higher ratings of anxiety, stress, and negative affect” (Fox et al.). Therefore, stress is intricately linked to women’s negative affect, or mental health disposition, and impacts their behavior significantly--with women who face more severe drug abuse problems also endure a greater lack of social support.

Thus, the presence of abusive intimate partners, and a dominating male presence along with the lack of a strong support system, can both detract from women's progress towards recovery and engender relapse, which is detrimental to women's health as it is a source of stress.

Additionally, physiological differences in the sexually dimorphic regions of the brain and addiction pathway mechanisms induce a need for treatment that incorporates gender and combats stress. Dysregulation of the adrenergic region of the brain, which is important in reward and motivational states, occurs after ceasing cocaine use (Fox et al.). Stress is a leading factor in affecting women's recovery and addiction process. Brain chemistry is integral in understanding the differences women face in comparison to men. In fact, for women, "[a]s enhanced negative affect and sympathetic sensitivity to stress and drug cues during early withdrawal have been associated with elevated craving and relapse, centrally mediated inhibition of NE, via functional antagonism of noradrenergic signaling, may provide a salient mechanism for medications development" (Fox et al.). Essentially, stress is affected by psychological dispositions that go on to affect both cravings women face and relapse risk, wherein the hormone norepinephrine (NE), a stress hormone, signals reactivity through brain chemistry. NE thus plays an integral role in addiction development, and it is clear that stress remains the one factor predisposing women to ineffective modes of recovery (i.e. through relapse and self-medicating). A decrease in stress—primarily coming from social issues and heavily abusive male authority figures--will thus be effective in reducing dangerous chemical reactivities within the brain.

IN DISCORDANCE WITH HEALTHCARE BIAS

At the core of the issue, women who are addicted to controlled substances receive social backlash and stigma that affect their ability to access effective treatment. With obstacles hindering a woman's recovery, addiction becomes a disease that remains uncontrolled. For example, "At the drop-in centers, the staff stigmatize the women by defining their 'master status' as either prostitutes or drug-addicts...their narratives around 'motherhood' highlight these women's attempts to act 'responsibly' in taking control of their lives." It should be noted that, "[u]nfortunately, many of these women in their struggles with 'being a mother' internalize institutional notions of stigma and define themselves as being 'inadequate.'" (Hunt et al.). The complete lack of empathy portrayed by medical pro-

viders further reveals how bias impacts how women are treated. Women are considered to be mothers first, and are defined by their relationships instead of being treated as individualized people seeking help. Alternatively, men who seek treatment are not implicitly defined by fatherhood first—it is women, irrespective of whether they are a mother, who face the backlash of this identity. Defining women seeking treatment for addiction as “inadequate” mothers thus alters treatment. The woman becomes devalued. Medical staff who allow bias to sway their decision-making are not providing effective, empathetic treatment. In the recovery alumnus’ story in “I Didn’t Know About Addiction or Mental Health,” she felt a moral judgement from others as a woman who was addicted because she had a child to care for, and was told by hospital staff when she was seeking help that they were unable to help her (Sheb). Essentially, women must be treated as more than just a label for their problem. Being defined by their addiction as opposed to their potential and desire to get better (as men are defined), is not conducive to treatment. The lack of empathy that stems from moral judgements on a woman’s character ultimately conveys to women seeking treatment that they are not respectable enough to receive it. Thus, it is in this way that the male baseline perpetuates the view of women as an othered body who is defined by her gender in the rehabilitation industry, preventing her from getting effective treatment.

INTRODUCING EMPATHY IN TREATMENT

It is necessary to introduce empathy to combat the baseline treatment plan, engendering a more effective way for women to heal by normalizing differences. Accommodation of gender differences is required to maintain acceptance for what is considered to be outside the baseline. In fact, it is recommended to “Help a society which is ‘difference centered;’ [sic] cast doubt on normative beliefs shaped in both marginalized and privileged spaces; and finally make those who hold such normative beliefs uncomfortable” (Hunt et al.). This calls on society to redefine what it means to be a person seeking treatment. There is no standard, and there should not be one considering the diversity of the population of those who are addicted. Women should not have to feel they are outside the male-centric norm. Paradoxically, an inclusive world actually promotes individuality and broadens the definition of what is considered to be normal. This will lead to a difference in treatment--the difference being confirming individuality that strays away from mak-

ing assumptions based on a very strict definition of what normal addict behavior is. It must be stated that “poor awareness about the influence of doctors’ emotions on clinical judgment is reflected in the literature on diagnostic errors...difficult behaviors of patients can interfere with the diagnostic reasoning, adversely affecting clinical judgment” (Mamede et al.). Essentially, Mamede implies how “difficult behaviors” often simply mean different behaviors in a physician’s view. Thus, individuals who are tasked in providing treatment on such a personal level risk succumbing to bias due to their interpretation of different behavior as difficult behavior. As such, errors follow because doctors are emotionally impacted by what they cannot comprehend. Healthcare providers with greater empathy allow for more effective diagnostic and clinical judgment, resulting in more effective care. Thus, by first expanding what is considered to be the norm, true justice can be brought to women receiving treatment.

TREATMENT BY WOMEN, FOR WOMEN

Holistic treatment that is designed by women for women creates a safe space for women who are addicted to heal, requiring retention within the program. The feminist framework that views addiction treatment as a gender-impacted occurrence allows gender specific treatment like Women’s Only (WO) programs to cater to women’s needs that fall outside the typical rehabilitation and recovery model (e.g. a 12-step spiritual model). According to the recovery alumna, her time at a 12-step program initially left her with a “hard time connecting, getting past [her] anxieties” (Sheb 16:00). It was her environment that prevented her from fully integrating into the program to properly receive effective treatment. She was not treated as an individual, but rather a statistic when compared to others in a model that treats men. As such, it is imperative to view women seeking help not as the female equivalent to men who are addicted, but as women who are addicted. They have a range of other mental health issues, as well as experience with economic and structural problems that take away their power and autonomy. There is a necessity for multimodal treatments “that address a range of issues simultaneously instead of single-issue interventions... not only encompass trauma-informed components but also provide secure environments where participants can avoid being judged for their history of abuse and addiction” (Saxena et al.). Gender specific environments in WO programs value a holistic approach to treatment that does not define a woman seeking

recovery solely by her addiction. Instead, WO programs acknowledge a woman's background and take into account her history that impacts the way she responds to treatments. The level of compassion and empathy that a feminist framework provides essentially offers a safe space for women who seek recovery because they are treated as individual people. Female staff in WO programs often can relate to women seeking recovery because they face similar issues and display no ties to the common stressors of male authority, allowing for empathy in treatment. This mutual understanding and acknowledgement of a woman's history is what allows female staff to provide the gender-specific treatment that women who are addicted need. In fact, "[k]nowing the specific characteristics of abused women will allow therapists to implement individually tailored strategies to increase retention in intervention programs and to provide better treatment outcomes, in the same way as Seeking Safety programs with PTSD and addiction" (Fernandez-Montalvo et al.). When individuality is expressed, a deviance from the norm is not only expected but promoted to enhance treatment that targets women's needs. Even when women are able to access treatment, retention in programs remains to be a major issue because past traumas and barriers are still present. However, greater empathy and validation of a woman's experiences can combat that. There is a level of trust that stems from such a relationship. Trust from empathy increases the retention rate of the program because women are being treated with respect and given value, and this ultimately leads to greater success in recovery.

The effectiveness of treatment is contingent upon its gender specificity that provides women the tools to properly succeed in the long term. Integrating empathy-driven feminist framework into treatment models will ensure addiction by itself is not the sole target of treatment. Instead, women's history and retention within a program is stressed through different measures. However, without empathy, like in the criminal justice system, the cycle of addiction does not truly end. For instance, "Lack of appropriate treatment in prison leads women parolees back to their communities without tools to change their lives and subsequently leads them back on criminogenic pathways" (Saxena et al.). In prisons that lack social support and specialized programs, the drug is not necessarily available to the women who are dependent upon them. Yet still, when people claim prisons can treat their addiction by not providing the drug, the addiction is still present and impactful as women who are released are still victims to their disease. Women who are dependent upon controlled substances

ultimately use again after release, but then are sent back to prison with no true chance of recovery (Saxena et al.). This is inherently lacking empathy as it only propagates an unequal, unjust system of abuse because women are not being taught the ways to succeed as well. Interestingly, “WO programs are more likely than [mixed gender] programs to offer special services such as childcare and prenatal and postpartum care for pregnant women, assistance with housing, transportation, job training, practical skills training, and on-site childcare services” (Hser). Long term recovery is instilled through providing women a direct way to find ways to cope with their problems. These are empathetic and logical steps that actively maintain women retention rates. Women who are addicted are especially impacted by their socialized roles and face bias in society, but when provided the necessities to cope with everyday stressors from housing to child-care, these women can find peace of mind as they learn healthier ways to cope with their problems. The feminist framework ultimately highlights how women must be given specialized treatments when recovering from addiction that include WO programs that offer multi-modal support and provide holistic skill building or resources available.

CHANGING TREATMENT TO LEAD WITH EMPATHY

It is clear a change in perception must take place to properly address the needs of women. First, laws must change to ensure imprisonment for drug-related charges is not the primary choice, but recovery through treatment programs are optimized instead. This would be beneficial for all individuals looking to recover from substance abuse and would break the cycle of criminalization and addiction. However, to further accommodate women who are addicted, emphasizing the importance of gender specific treatment through WO programs will combat the stereotype of addiction being a man’s disease. It is an important step away from the baseline that will impact care and treatment women receive because of the higher empathy and respect that is ultimately conveyed to women who are seeking treatment from addiction.

More importantly, it is imperative that women are included in research, both behind the scenes and as subjects. This is a way to combat bias, as representation can break misconceptions, and mold laws and policies. When women are included in research, they are receiving treatment and recognition, thus highlighting any potential breakthrough in recovery when variables are controlled for--and therefore, more research

must be done to rectify past mistakes on overlooking women's role in addiction. Because women are validated as different people sometimes requiring different needs, including women is a way feminism can directly promote the recovery of women who are dependent upon controlled substances. Bonds forged through such a vulnerable period in women's lives truly are impactful, therefore providing both effective and empathetic care is contingent on science backing up why women need specific, focused treatment. Addiction is a disease, and women who struggle with it deserve recognition on a large scale. Women's recovery must be met with a feminist framework to alter how treatment and recovery are achieved, with far-reaching and widespread effects that can truly last generations and improve women's lives for the better.

CONCLUSION

Ultimately, the recovery system in the United States must change to properly address the needs of women suffering from addiction. Addiction is something born from unfortunate circumstances; it is not a personal weakness, but a disease. The trauma and abuse that women are more likely to be exposed to put them more at risk to developing addictions more dangerously. The barriers they face also promote more risky behavior and result in a lack of access to effective treatment. This risk can be mitigated, however, especially considering that a "key barrier to the addiction recovery of women is the present framework of addiction treatment, as well as current drug laws, policies and service delivery systems." (Kruk et al.). The influence that gender specificity has on recovery incites a need to view addiction recovery through a feminist lens that takes into account the variable of womanhood and how that impacts the treatment efficacy for women in typical male-centric treatment models. The male-centric models stemming from implicit bias within the medical and research community are ineffective in providing a majority of women with the ways to succeed in the long term. However, feminist ideals properly elucidate the differences women and men face, identifying an unmet, overlooked need that women who struggle with addiction face. Bias that creates barriers for women to access treatment are an integral factor that must be considered. The power of ineffective treatment through a lack of empathy is a large factor in the never-ending cycle of addiction because long term growth is not prioritized. What this feminist framework allows for is a shift from the male-baseline, and provides women multimodal,

success-oriented programs that both promote retention within recovery programs and lead women to have more confidence in their lives through both resources and skills. Not only is addiction recovery possible, but providing women safety from the environments and factors leading them to addiction is promoted and leads to long-term, effective and empathy-driven outcomes.

WORKS CITED

- Chandler, Redonna K et al. "Treating drug abuse and addiction in the criminal justice system: improving public health and safety." *JAMA* vol. 301,2 (2009): 183-90. doi:10.1001/jama.2008.976
- Fernandez-Montalvo, Javier et al. "Therapeutic progression in abused women following a drug-addiction treatment program." *Journal of Interpersonal Violence*, vol. 32. no. 13, 2017.
- Fox, Helen C., Morgan, Peter, and Sinha, Rajita. "Sex differences in guanfacine effects on drug craving and stress arousal in cocaine-dependent individuals." *Neuropsychopharmacology*, vol. 39, no. 6, 2014.
- Hser, Yih-Ing et al. "Long-term outcomes among drug-dependent mothers treated in women only versus mixed-gender programs." *Journal of substance abuse treatment*, vol. 41, no. 2, 2011.
- Hunt, Geoffrey et al. "Rethinking Gender within Alcohol and Drug Research." *Substance use & misuse*, vol. 50, no. 6, 2015, pp. 685-92. doi:10.3109/10826084.2015.978635
- Kruk, Edward, and Kathryn Sandberg. "A home for body and soul: substance using women in recovery." *Harm reduction journal* vol. 10, no. 39. 20 Dec. 2013, doi:10.1186/1477-7517 139
- Mamede, Silvia et al. "Why Patients' Disruptive Behaviours Impair Diagnostic Reasoning: a Randomised Experiment?" *British Medical Journal*, vol. 26, no. 1, 7 Mar. 2016, pp. 1-6., doi:10.1136/bmjqs-2015-005065.
- Najavits, Lisa M., and Kristin M. Lester. "Gender differences in cocaine dependence." *Drug and alcohol dependence*, vol. 97, no. 1-2, 2008.
- Saxena, Preeta et al. "Who Benefits From Gender-Responsive Treatment?: Accounting for Abuse History on Longitudinal Outcomes for Women in Prison." *Criminal Justice and Behavior*, vol. 41, no. 4, 2014.
- Sheb, Matt; host. "I Didn't Know About Addiction or Mental Health." *Stories of Addiction*, episode 48, MARR Addiction Treatment Center, Jan., 2020.
- United States Drug Enforcement Administration. "Drug Scheduling." *Drug Enforcement and Administration*. <https://www.dea.gov/drug-scheduling>

Timothy Kim

Death by Fanaticism: A Study of Celebrity-Obsessed Individuals and Their Mental Health

ABSTRACT

Applying pre-established research models such as the absorption-addiction model to current events (e.g. recent celebrity suicides) suggests that individuals who are “obsessed” with celebrities in either a positive or negative way often display some degree of poor mental health or well-being. To accurately assess this correlation, professional references were used to gauge the validity of these claims through their application to recent events. The established criteria for what is perceived to be obsessive behavior were erected through various studies by researchers such as J. Reid Meloy, John Maltby, and Lynn E. McCutcheon. Cases of extreme harassment that led to injury or death largely determined poor mental health to be a chief component of obsessive behavior. There are, however, some factors besides poor mental health that can be used to explain these “obsessive” behaviors, such as suboptimal living environments or a decelerated rate of individual identity formation. These are reasonably documented and accounted for by several experts, a few of which are mentioned in this paper, to conclude that poor mental health is the ultimate overall connection. This seesawing of opinions isn’t due to ambivalence as much as a simple lack of professional, controlled studies within this niche. Most of the experts referenced have given cautionary conclusions, knowing full well that this field is still waiting to be fleshed out, but the general consensus is that it is more likely than not, based on models and recent events, that there is a link between celebrity obsession and poor mental well-being.

INTRODUCTION

The year is 1992. South Korea, a nation still adjusting to a life of autonomy, continues to establish its culture. In the heart of the Republic of Korea, countless residents are found looking to make their mark in the rapidly developing nation. Street markets line each avenue of the capital, Seoul, bustling with business. Hopeful buyers forage for the best deals while compelling sellers reel in profits with “unbeatable” bargains. Among

these two groups is a dormant commonality, one that only twenty-year-old Hyun-Chul Jung realizes: an interest in music. Starting his career at age fourteen as a member of several amateur bands, Jung was filled with innovation as a budding artist. Soon after his first long-term band parted ways, Jung, now publicly known as “Seo Taiji,” along with bandmates Hyun-Suk Yang and Juno Lee decided to form the alternative pop boy band “Seo Taiji and Boys.” Their debut album was an instant success across the nation and is still widely claimed to be the turning point of mainstream Korean music (Korea Herald). We now know this musical style to be the globally acclaimed genre called “K-pop,” and many ambitious artists today seek to emulate Seo Taiji and Boys’ impact.

With this fame, however, came an unexpected curse. There were some “fans” notorious for following their favorite celebrities in extreme ways. This behavior led to several instances of injury, psychological trauma, and even death. These “fans” were usually condemned briefly by others, but once people forgot about the headlining report, the abusive fans went back to their antics. In this paper, I contend that there must be some sort of psychological instability among those who fixate on public figures in this manner. In other words, I’m arguing that intense celebrity obsessions are indicative of poor psychological well-being and stability. Since psychology is a scientific field reliant on evidence, I’ll be drawing from several theoretical frameworks in order to unveil the causes of this obsessive behavior and to connect this behavior to poor psychological stability. The primary framework used will be the psychological background of obsessions. To further elaborate, I’ll refer to sources that specifically discuss celebrity worshippers’ mental state and how it leads to headlining stories on topics like public violence. I’ll also be reviewing the potential link between mental instability and acts of violence/social misconduct. In an effort to draw concrete examples from the world we live in today, supporting the broad theory will be concentrated cases of several stars who have fallen prey to obsessive fan behavior.

Given the information I have highlighted up to this point, the position I am taking is that there is, in fact, a link between poor psychological health and celebrity-worshipping: the more intensely someone celebrity-worships, the worse his or her psychological health is. The news of celebrities getting hurt as a result of an obsessive fan’s antics leads me to wonder what causes these fans to act in such a way while believing that their behavior is acceptable. People have died as a result of some of these fans. What kind of person of sound mental health would partake in such behavior?

THE LINE BETWEEN FAN AND FANATIC

In order to more accurately assess celebrity worshippers' psychological stability, I will be drawing from the text *Stalking, Threatening, and Attacking Public Figures: A Psychological and Behavioral Analysis*, a book by J. Reid Meloy, Lorraine Sheridan, and Jens Hoffmann, all of whom are prominent researchers within the field of psychology. This text will provide the information necessary to understand how a person's mind works when obsessing over a celebrity. More specifically, this section is dedicated to establishing a fully mapped-out, common definition of "celebrity-worship" and "fanatic" that will be used throughout the rest of the paper.

One of the first distinctions that can be made using the text written by Meloy et al. pertains to "normal fixations" and "pathological fixations" (5). Normal fixations are described as similar to the feelings of early romantic love, including "certain hobbies; intensely held political, social, or religious beliefs; and loyalty toward certain celebrities or other public figures" (Meloy et al. 5). These kinds of attachments potentially compensate for a life that feels lacking and undesirable. The "pathological fixations" appear to be a much stronger version of the "normal fixations." It "places upon the public figure an obligation, and the believer demands acknowledgment" (Meloy et al. 5). This is otherwise referred to as "entitled reciprocity," meaning that those who have an intense connection to a celebrity believe that they are entitled to a certain level of responses, either through words or actions, from their person of interest (Meloy et al. 5). Additionally, an individual experiencing this fixation may experience a behavioral progression "during which their fixation alienates others, undermines social networks, and erodes finances, leaving the person often isolated and destitute" (Meloy et al. 5). Such consequences would impact the social life of the individual, which could possibly lead to mental health problems that require intervention. In the cases referenced in later sections, I aim to see whether this turns out to have strong enough support from psychology experts.

Violence is one potential avenue that can be used to assess the mental instability of an individual. In a study conducted by Hoffmann and Sheridan, "The Stalking of Public Figures: Management and Intervention," the researchers note that "if one studies attacks on celebrities, ... in almost every case there was a period of planning and preparation prior to the violent act. These are not usually the impulsive actions of people

who suddenly lose control. Rather, the perpetrators are often mentally unbalanced and unhappy individuals who use violence in the hope of resolving their problems or at least relieving their situation” (1461). Additionally, the term “predatory violence” used by Meloy et al. is used to describe the type of violence shown toward celebrities who are stalked. Predatory violence is “characterized by the absence of autonomic arousal, the absence of emotion, and the absence of an imminent threat, and is planned and purposeful” (Meloy et al. 11). This appears to somewhat corroborate what psychiatrist Arash Javanbakht, M.D. discusses regarding Arthur Fleck, the main character of the movie *Joker*, as Javanbakht claims that Fleck “disconnects” as he kills the personal idols in life, like his mother and Murray Franklin, a “praised father figure.” Consulting the study “Mental Disorder and Crime: Evidence From a Danish Birth Cohort” led by Sheilagh Hodgins gives further support to the claim that violence is a possible means of assessing an individual’s mental instability. Hodgins et al. reported that “women and men who had been hospitalized in psychiatric wards were more likely to have been convicted of a criminal offense than persons with no history of psychiatric hospitalization” (489). The researchers that conducted this study then went on to claim that these results “confirm those from 2 other post-World War II Scandinavian birth cohorts that have found an association between psychiatric hospitalization and criminal convictions. They also concur with findings that patients discharged from psychiatric wards are more likely than other persons living in the same community to commit crimes and with results from North America showing elevated rates of major mental disorders among incarcerated offenders” (489). Furthermore, there are several numeric scales made to gauge risk assessment of those within different levels of psychological instability created by Steven Banks et al. in the study “A Multiple-Models Approach To Violence Risk Assessment Among People with Mental Disorder” and John Monahan et al. in their study, “An Actuarial Model of Violence Risk Assessment for Persons With Mental Disorders.” Through their results, both research groups established a way to gauge the risk of violent tendencies based on the level of psychological instability demonstrated by an individual. Both groups also noted that applying their respective approaches were, in the words of Banks et al., “highly accurate when compared to other approaches” (338) and, in the words of Monahan et al., had “considerable accuracy” (810) in regards to relating violence to an individual’s mental health. This would be grounds to say that there is a notable correlation between violence and degrading

mental health, allowing me to establish this as part of the framework I will work with for the rest of the analysis.

Using this information, I assert that one indicator of an individual being a “celebrity-worshipper” or “fanatic” is that they have physically assaulted (or have been planning to physically assault) their target. Additionally, Hoffmann and Sheridan point out that “the perpetrators are often mentally unbalanced and unhappy individuals who use violence in the hope of resolving their problems or at least relieving their situation” (1461). This solidifies the claim that violence indicates mental instability as worshipping does not necessarily have to mean adoration. In fact, celebrity-worship and fanaticism could include obsessive tendencies that are outwardly malicious or negative as well. For instance, Javanbakht notes that Arthur Fleck “kills what he cannot have, and cannot be, and disconnects.” Fleck is, in a way, redirecting his “pain within” toward those around him, including those he so desperately seeks out approval and security from (Javanbakht). But despite Fleck’s strong gravitation toward these key people in his life, such as his mother and Franklin, he decides to remove the things and people he can’t have in his life instead--a twisted kind of adoration projected onto his personal idols.

For many celebrity-worshippers, harassment is a natural next step. Thus, reviewing data regarding certain behaviors that may also be considered harassment is another way to gauge what would be considered “celebrity-worshipping behavior.” A study used by Meloy et al. surveyed public figures in the Netherlands, and their experience with stalkers and obsessed fans. The researchers found that 33% of the public figures reported that their stalker had undergone psychiatric treatment. The actions these fanatics partook in include making harassing telephone calls, writing letters, faxes, and e-mails, giving unsolicited gifts, physical following, surveying the target’s home, and harassment of family and friends (Meloy et al. 196). Even fanatics who did not take physical action have been clinically treated for their psychological well-being. Seeing as Korean celebrities experience many of these same fan behaviors, it is likely that a significant number of these fans exhibit poor mental health as well (Lee). Because of this development, the definition of “celebrity-worship” has expanded from attempted or successfully carried out physical harm to include the aforementioned behaviors of harassment.

MEASURING CELEBRITY-WORSHIPPING IN AN INDIVIDUAL

According to the study “The Self-Reported Psychological Well-Being of Celebrity Worshipers” conducted by John Maltby, Lynn E. McCutcheon, Diane D. Ashe, and James Houran, there are multiple levels of celebrity-worship. Each of the aforementioned authors has done extensive research in psychology and criminal cases at their respective universities. Briefly put, the methodology behind this study is centered around a three-tier spectrum to assess an individual’s level of celebrity obsession. The first level, the mildest, is the “entertainment-social” factor, which reflects social aspects of celebrity worship and the celebrity’s ability to entertain their fans (Maltby et al. 444). The second level is called “intense-personal,” which attempts to gauge individuals’ obsessive and compulsive feelings around their favorite celebrities (Maltby et al. 444). The third and most suffocating level is called the “borderline pathological” factor, which reflects a few of the more extreme thoughts fans may have regarding their favorite celebrity (Maltby et al. 444). A quick comparison indicates that the first two factors of this spectrum are what Meloy et al.’s text may classify as “normal fixations,” and the third factor is what Meloy et al.’s “pathological fixations” would indicate. In addition, Maltby et al.’s study also highlights the “absorption-addiction model” through which an individual establishes a sense of identity and fulfillment by becoming increasingly absorbed in the celebrity he or she is a fan of (443). This absorption is then later reinforced by addiction, which harbors the necessity for stronger action to feel like they are legitimately connected to the celebrity. This model will be a valuable tool in assessing the mental health of the perpetrators analyzed in the following sections that discuss the factors and fixations that have been compared. Applying the theories of not one but two independent studies, I’ve explicitly highlighted the behaviors of celebrity-worshippers and confirmed the lines a fanatic would have to cross before being considered a celebrity-worshipper by the definitions established earlier.

CASES OF HARASSMENT

As previously stated, harassment without physical action can be described as “celebrity-worshipping behavior.” To properly highlight this, a case-by-case approach will be taken in order to confirm my claim that attempts to extend the findings of past research to cover Korean celeb-

rities' experiences of celebrity-worshippers as well. The primary text, written by Meloy et al., notes more behaviors that could be considered harassment and that have caused celebrities distress: "other distressing behavior from obsessive individuals included following the television personalities by car, breaking into their offices, seeking out the homes of the parents of the public figure, and regularly traveling hundreds of miles to see the celebrity in a public appearance" (201). There are a few cases that have been reported by the Korean media that detail very similar incidents. In this context, the authors describe these people as stalkers. By definition, stalkers are people who pursue a target obsessively to the point of harassment. If the essence of being a stalker is being obsessive, then it follows that these people also fall under the category of celebrity-worshippers. This linkage is further solidified in considering that their harassment takes place in the form of "physical following," which was addressed in section II. With this inclusion, the incidents Super Junior's Heechul Kim describes would also fall under this category. Kim said that "fans once just threw open the door [when I was using the urinal], and I was traumatized by that experience... They would also secretly come into my house" (Jeong). These instances of harassment fall under the same category of harassment that stalking the target, surveillance of the target's home, and the harassment of the target's family fall under, and are clearly depicted in the South Korean media as well. Under the support of Meloy et al., I would argue that these fanatics are psychologically unstable. The absorption-addiction model, which would classify such behaviors as the most severe "borderline pathological," also corroborates the theories of Meloy et al., which classify this as harassment and celebrity worship.

There is also a description of some stalkers that take the "emulation of identity" approach too far. They are known as "identity vampires," and it has been claimed that "deficits in their early lives" are the likely motivator for fantasizing about having a genuine connection with their target (Hoffmann and Sheridan 1464). This is seen as a necessity to their psychological equilibrium as a result of such deficits, making these celebrity-worshippers very sensitive to "abandonment, rejection, and/or loss" (Hoffmann and Sheridan 1464). This falls in line with another study regarding possible celebrity-worshippers done by Chau-kiu Cheung and Xiao Dong Yue, "Idol worship as compensation for parental absence," where the researchers exclusively studied how deficits in the form of parental absence result in celebrity-worshipping behaviors. Overall, the researchers concluded that "preference for older pop idols tend to com-

pensate for parental absence in order to find other successful and older adults as substitutes. Idolizing in general would be compensation for the absence of parents and their deficit in social status” (Cheung and Yue). The studies conducted by Hoffman and Sheridan and Cheung and Yue point to deficits as a factor of poor psychological well-being that results in celebrity-worshipping, which plays a large role in understanding the cases of harassment that have been analyzed above and subsequent cases that do not fall under this category but under injury and/or death.

CASES OF INJURY

Given that the second and third factors of the absorption-addiction model include “intensive and compulsive feelings” and “extreme attitudes” fans may have in regards to their favorite celebrities, I believe it is reasonable to say that cases of injury to celebrities would fall under this category of fanaticism (Maltby et al. 444). For a fan to go out of his or her way to injure a public figure knowing that this would be extremely hard to do without being noticed or charged against, I argue that there must be some degree of psychological instability present. One instance of this happening was in 2000 when “actress Yoon Eun-Hye was attacked by a male anti-fan who shot her in the eyes with a water gun filled with a mixture of soy sauce and vinegar” (Lee). This event would corroborate the “intense-personal” and “borderline pathological” factors that Maltby et al. point out in their study. Another example would be when “Gan Mi-Yeon, a member of the all-girl pop group Baby VOX, went to the police for help in 1999 after she received an envelope full of razor blades” (Lee). Lee states that the supposed cause was a fan’s jealousy of Gan’s suspected relationship with a famous boy band member, and this example can be traced back to earlier studies done to see how idols are simply targets for projection. The deficits this celebrity-worshipper felt were affecting his or her psychological stability to the point that he or she chose to make a threat against a public figure, further developing the original thesis. Additionally, there was an instance several years ago in which a widely successful K-pop star was given a beverage laced with superglue by an anti-fan, leading to the star’s subsequent emergency treatment (Kim). Lee details another incident where famous trot singer Na Hun-a “was slashed with a knife on his cheek while he was singing on stage.” These events are similar in that the offenders were all in a position in which lethal damage could have easily been accomplished. So, why inflict shallow wounds?

The celebrities they were eyeing were people they wanted attention from. If these fanatics were to kill their targets, then they would be left without their desired source of attention. In other words, celebrities can't pay attention to a fanatic if the fanatic is dead. This intense desire is again explained by the "borderline pathological" factor, the most severe of the three modeled in the study by Maltby et al., which goes hand in hand with the addiction end of the absorption-addiction spectrum. The "pathological fixations" also line up with my claims as seen in Meloy et al. and its definition of entitled reciprocity. What better way to "demand acknowledgment" than to slash a celebrity across their face?

CASES OF DEATH

Constant online harassment of several public figures has led to their subsequent demise. Although not as direct as other forms, virtual fanaticism may also be regarded as celebrity-worshipping considering that the intentions and thoughts are the same despite the lack of face-to-face interaction. Justin McCurry from *The Guardian* reported that right after the death of a K-pop star, Sulli, "the website of the office of the South Korean president, Moon Jae-In, was flooded with demands... that users be required to register their real names before commenting" (McCurry, "Death of Sulli"). This was in response to the singer taking her own life after being harassed online for many months. The psychological stability of these "fans" must be questioned as it has been observed within the Korean entertainment industry that fans' words are what truly kill (McCurry, "Death of Sulli"). Furthermore, the degree of a celebrity's exposure in the media is noted to be "an important risk factor" for harassment by fanatics (Meloy et al. 196). Both the "normal" and "pathological" fixations Meloy et al. discuss would also explain what Sulli experienced. The "pathological" fixations are centered around the idea that celebrities are indebted to the fanatics, and when the fans don't feel the attention they are entitled to, harassment comes into play. Additionally, even the "normal" fixations are to blame. Having "intense beliefs" and "loyalty" to other celebrities have the potential to draw negative attention from obsessed fans who want their favorite celebrities to seem more attractive than the celebrity they are currently harassing. The "why" is even more sought after following the death of Hara Goo, another K-pop star who was the target of online bullying by fans and fanatics and who was close friends with Sulli. Goo's case of bullying was intense as well and only worsened once Sulli took

her life (McCurry, “Goo Hara Found Dead”). To that effect, this only strengthens the argument that the psychological well-being of fans who bully celebrities must be questioned. Hara Goo was high-risk for trying to commit suicide, especially since she made a previous attempt in 2019. Would anyone truly consider further bullying Goo to be a psychologically sound decision to make? To be that absorbed in the life of a celebrity is illustrated by a severe addiction-ended side of the model for the fanatics involved in Goo’s cyber-bullying.

COUNTERARGUMENT

Those who research the potential link between psychological well-being and celebrity-worship tend to bring up the possibility that celebrity-worshipping could possibly help an individual kickstart his or her creation of an identity, to develop his or her unique personality. This could be in the form of finding a community of like-minded fans enamored with the same celebrity and using this community to build up social skills to feel supported by others (Maltby et al. 443-4). Realistically speaking, it is possible; however, the statement that an individual can build an identity by obsessing over someone else is paradoxical. How can someone develop his or her own personality by basing himself or herself on someone else’s entire livelihood? Furthermore, this behavior would indicate that the individual is swayed easily, showing a lack of tact. This suggests that the counterargument is flawed in that it’s paradoxical. I base this claim on the article, “Can emotional intelligence restrain excess celebrity worship in bio-psychological perspective?” This is a study conducted by A. Sulianti, F.S. Lubis, F. Az-Zahra, and A. Hambali in Bandung, Indonesia, where K-pop is very widespread and relevant (1). The researchers suggest that low emotional intelligence influences K-pop fans to become more and more obsessed, wanting to become their favorite celebrities as opposed to simply appreciating their craft from afar. This, however, is seen to be indicative of poor mental health and doesn’t help with building an identity. Instead, it appears to slow the process down significantly (Sulianti et al. 4). With this in mind, the counterargument that being able to celebrity-worship means being able to kickstart one’s identity is not only paradoxical but also flawed.

Compensating for a lack of parental influence may also be viewed as a counterargument to my position, and it is one that was also interlaced within Cheung and Yue’s discussion. For those individuals who do

not have actively involved parents, this counterargument would contend that they should not be considered mentally-crazed fanatics: they are simply people who express more attachment, understandably so, as a result of being neglected as children (Cheung and Yue). The problem with this claim is that choosing to look up to someone they don't know personally as *the* person in their life to depend on for parental comfort is inherently unstable. How can they be emotionally dependent on someone they've never met, and how can they be so emotionally-dependent to the point where they look to this celebrity as a parental figure? That is absolutely within the realm of the "fixations" Meloy et. al discuss in their text and is a strong indicator of poor psychological well-being. Although one could bring up that the violent tendencies that have been established as a possible indicator of poor psychological well-being come into play here as well, the intense "fixations" that Fleck from *Joker* imposes on his personal idols, as noted by Javanbakht, is a way of "disconnecting" altogether despite holding onto the emotional attachments Fleck had for his parental figures. However, because Fleck had parental figures in his life that weren't mentally or emotionally supportive, he ended up becoming mentally unstable himself. This would be somewhat valid for the argument at hand, but the issue is once again the "fixations" that Meloy et. al discuss. It is not *entirely* representative of Fleck's case, but it can still be said that he is holding a degree of "pathological fixations" towards his mother and Franklin. Since Fleck eventually kills them as a result of his fixations and psychological unrest, based on the aforementioned criteria, it is still a clear illustration of poor psychological stability.

IS THE MENTAL HEALTH STIGMA EXACERBATING THE ISSUE?

Another aspect of gauging whether celebrity-worshipping is an indicator of poor psychological well-being is the impact of the mental health stigma. This is important because there is very little "mental health literacy" in South Korea (Park and Jeon 299). Pop stars in South Korea are unironically referred to as "K-pop idols," making their fans a great example of "idolization." Because of this and the many instances that have been highlighted in preceding sections, I will be examining the mental health stigma in South Korea specifically as fans there have consistently shown signs of celebrity-worship. Research into mental health literacy in Korean is "rarely undertaken" (Park and Jeon 299). Park and Jeon go on further

to state that “because long-term and systematic implementation strategies are not in place, awareness projects [regarding mental health literacy] are not being well-fulfilled” (Park and Jeon 307). This would allow me to reasonably state that those who are afflicted by mental health complications don’t receive the proper care and are unlikely to attempt to get it given the stigma and lack of mental health literacy in the nation, as noted by Park and Jeon. This point is introduced because there are bound to be lurking variables between poor psychological health and the tendency to celebrity-worship. This would be one possible case where the stigma is what’s exacerbating the supposed correlation between mental health and celebrity-worship that the above researchers point out.

If the general public is largely uneducated on mental health, then those who exhibit poor psychological health wouldn’t be keen on seeking help. Those who need medical help won’t know that they have a legitimate medical issue and wouldn’t want to be seen in the public eye as unstable—the very definition of a stigma. As a result, these people who choose not to seek help may end up celebrity-worshipping and may try resolving their mental health issues in unhealthy, destructive ways similar to those mentioned in earlier sections.

CONCLUSION

Based on the frameworks, research, and cases described throughout the paper, the question of whether celebrity-worshipping is an indicator of poor psychological stability is one that cannot be answered with utmost certainty but one that can be answered with a cautious “yes.” There has been extensive research done to back the conclusion that celebrity-worshipping behavior is linked to poor psychological well-being; however, there are still traces of caution between the lines, and although a conclusion can be drawn, there is still much ground to cover in this niche field. Regarding my findings, I believe that there is enough evidence in this paper to further develop the discussion. Looking into recent threats towards celebrities is a starting point that could unveil more answers. Profiling everyone who has openly engaged in celebrity-worshipping behaviors may yield more answers.

Finding answers to develop this thesis would be of great service to the mental health community as well as the entertainment industry; however, we would have to ask why some entertainment agencies seem to almost welcome this kind of behavior. Celebrity merchandise of almost

any kind is readily available (e.g. t-shirts with a celebrity's face on them). Additionally, there are social media platforms on which agencies heavily market their celebrities to the point where idolization is almost expected. I have already discussed the broader scientific side of whether or not there is a link between celebrity-worshipping tendencies and poor psychological well-being, but I also have to ask: is this behavior perpetuated and desired by entertainment agencies? It is certainly a secure way to maintain profits. To that effect, why is this way of marketing so widespread around the world, and why do people buy into it and support it to the point that huge profits are possible? An economic perspective is beyond the scope of this paper but would most certainly be worth further independent research.

WORKS CITED

- Banks, Steven M., et al. "A Multiple-Models Approach to Violence Risk Assessment Among People with Mental Disorder." *Criminal Justice and Behavior*, vol. 31, no. 3, 2004, pp. 324-340.
- Cheung, Chau-kiu, and Xiao Dong Yue. "Idol worship as compensation for parental absence." *International Journal of Adolescence and Youth*, vol. 17, no. 1, 2012, pp. 35-46. Taylor & Francis Online.
- Hodgins, Sheilagh, et al. "Mental disorder and crime. Evidence from a Danish birth cohort." *Arch Gen Psychiatry*, vol. 53, no. 6, 1996, pp. 489-496.
- Hoffmann, Jens, and Lorraine Sheridan. "The Stalking of Public Figures: Management and Intervention." *Journal of Forensic Sciences*, vol. 50, no. 6, 2005, pp. 1459-1465.
- Javanbakht, Arash. "Joker: A Powerful Psychological Drama." *Psychology Today*, 1 November 2019, <https://www.psychologytoday.com/us/blog/the-many-faces-anxiety-and-trauma/201911/Joker-powerful-psychological-drama>.
- Jeong, G. "Super Junior's Kim Heechul Reveals Trauma Left By Sasaeng Fans." *Soompi*, 22 November 2016, <https://www.soompi.com/article/918223wpp/super-juniors-kim-heechul-reveals-trauma-left-sasaeng-fans>.
- Kim, Soe-jung. "Anti-fan' laces pop star's beverage." *Korea JoongAng Daily*, 15 October 2006, <https://koreajoongangdaily.joins.com/news/article/article.aspx?aid=2827693>.
- Korea Herald. "K-pop before and after Seo Taiji & Boys." *The Korea Herald*, 23 March 2012, <http://www.koreaherald.com/view.php?ud=20120323000748>.
- Lee, Min-a. "Anti-fans' force managers to increase stars' security." *Korea JoongAng Daily*, 23 October 2006, <https://koreajoongangdaily.joins.com/news/article/article.aspx?aid=2831901>.
- Maltby, John, and Lynn E. McCutcheon. "The Self-Reported Psychological Well-Being of Celebrity Worshipers." *North American Journal of Psychology*, vol. 3, no. 3, 2001, pp. 441-452. ResearchGate.
- McCurry, Justin. "K-pop singer Goo Hara found dead aged 28." *The Guardian*, 24 November 2019, <https://www.theguardian.com/music/2019/nov/24/goo-hara-k-pop-singer-found-dead-aged-28>.

- McCurry, Justin. "K-pop under scrutiny over 'toxic fandom' after death of Sulli." *The Guardian*, 18 October 2019, <https://www.theguardian.com/music/2019/oct/18/k-pop-under-scrutiny-over-toxic-fandom-after-death-of-sulli>.
- Meloy, J. Reid, et al. *Stalking, Threatening, and Attacking Public Figures: a Psychological and Behavioral Analysis*. Oxford University Press, Incorporated, 2008. ProQuest.
- Monahan, John, et al. "An Actuarial Model of Violence Risk Assessment for Persons With Mental Disorders." *Psychiatric Services*, vol. 56, no. 7, 2005, pp. 810-815.
- Park, Jong-Ik, and Mina Jeon. "The Stigma of Mental Illness in Korea." *Journal of Korean Neuropsychiatric Association*, vol. 55, no. 4, 2016, pp. 299-309.
- Sulianti, A., et al. "Can emotional intelligence restrain excess celebrity worship in bio-psychological perspective?" *IOP Conference Series: Materials Science and Engineering*, vol. 434, 2018. ResearchGate.

Joseph Xie

Big Data: What is Your Privacy Worth?

ABSTRACT

With the boom of the internet and the growth of online companies like Facebook and Google, the personal information of its users has become commodified. One such avenue for the trade of this type of information is through targeted advertising, where advertisers specifically choose to show their ads to an audience based on characteristics such as search or posting history rather than showing ads randomly. Targeted advertising and similar practices have been heavily criticized by people concerned about having their privacy harmfully infringed upon in a way that could be harmful to them. It is also argued that the same technologies that enable targeted advertising could be used to gain information and influence people without their knowledge or consent. To help resolve this issue, the question of what business ethics and privacy are is examined. Through the lens of normative business ethics, the aspects of online targeted advertising — what is for sale, the act of advertising in the context of an online environment, and the data collection and utilization necessary for targeted advertising to take place — can be examined to see whether or not targeted advertising is ethical, and if not, how it could be made to be ethical.

INTRODUCTION: THE PRESENT

You are being watched. Somewhere, your personal information and digital history is stored on a server, waiting to be sold off to the highest bidder. We live in an age of information, so much so that information technology and the internet have become inseparable from us. As such, we are always connected to the web in some way, whether we notice or not. Many companies that spawned from the internet, such as Google and Facebook, have been given a lot of influence over how people experience the online world. One controversy that has spawned much debate is to what extent companies are allowed to collect and use their users' data. Today, online companies constantly gather data about their users and sell them to ad exchanges. The ad exchanges in turn run an auction for an advertisement spot for that specific user, and ad networks

(advertiser groups) bid on them. Companies justify collecting user data in this way in order to gain a profit from free services, such as a social media service or a search browser. For example, approximately 98.5% of Facebook's revenue comes from showing advertisements, primarily due to the high value of their ad space, which is a result of the abundance of data provided on each user (Clement). On the surface, this arrangement seems to be a win-win for everyone involved: online tech companies gain revenue, advertisers get to efficiently advertise to their specific target demographics, and users are provided with free internet services and relevant ads. However, many critics of this system point out that these online companies are unethically violating their users' privacy. By analyzing this argument through the lens of business ethics, perhaps a suitable compromise or alternative could be found to help resolve the controversy.

THE ETHICS OF BUSINESS

According to the philosophy professor at Bentley University, Jeffrey Moriarty, business ethics can broadly be defined as "the study of the ethical dimensions of productive organizations and commercial activities" (Moriarty 1). The more specific portion of business ethics that will be considered here is normative business ethics, which answers the question of "What is ethical and unethical business?". In particular, Moriarty views normative business ethics through the framework of Kant's ethical theory, where "humanity should be treated always as an end, and never as a means only" (Moriarty 6). This framework would mean that actions that would harm a large number of people for the purpose of creating wealth for a few people are unethical, while actions that would benefit a large number of people with little sacrifice are ethical. But of course, like many controversial topics, targeted advertising falls into a gray area.

First, analyzing the ethics behind general selling and marketing can give insight to the controversies relating to targeted advertising. One large debate is whether or not some things should be up for sale in the first place. People who argue that some things should not be for sale cite that "markets in [inappropriate] commodities like sex and kidneys will lead to the exploitation of vulnerable people" (Moriarty 6). This argument could also apply to targeted advertising where the commodity for sale is people's information. According to Cathy O'Neil, an American data scientist and former Director of the Columbia Journalism School's Lede Program on coding and data analysis, "...over the course of weeks and

months [an advertising program] begins to learn the patterns of the people it's targeting and to make predictions about their next moves... And if the program is predatory, it gauges their weaknesses and vulnerabilities and pursues the most efficient path to exploit them" (O'Neil 68). While targeted advertising itself is not necessarily predatory, it could help enable predatory agencies to exploit the weak. As an example, O'Neil exposes the private for-profit college industry, which specifically markets itself to immigrants and the poor -- people who do not know much about college institutions but are still enticed with the dream of social mobility. One of these advertisements claimed: "Obama Asks Moms to Return to School: Finish Your Degree—Financial Aid Available to Those Who Qualify", deliberately misleading mothers to believe that the government had a new financial aid program even when no such thing existed (O'Neil, 68-69). When these advertising companies are able to directly market their advertisements to specific groups of people— in this case, non-college educated mothers who would need financial aid to pay for tuition— their messaging can be distorted in the perfect way to lure people in based on their specific interests. With data about what specific people are more receptive to, for-profit colleges are able to tailor effective ad campaigns to convince large numbers of vulnerable people to go into debt to purchase a worthless degree.

While some companies may exploit certain vulnerable groups by targeting them, others do so by excluding them. Recently the US Housing Department sued Facebook for allegedly violating the Fair Housing Act. According to *NPR*, Facebook allowed advertisers to include tags such as "non-American born" and "non-Christian" which led to housing marketers excluding these people from being shown their housing advertisements (Booker). Because these targeted advertisements caused the "exploitation of vulnerable [demographics]" through exclusion, people's personal data seems to fit within the category of unethical "[inappropriate] commodities" (Moriarty 6). If this is the case, why don't online companies take the ethical route and stop advertising these predatory companies? Because these types of predatory industries usually pay the most for advertisements. As discussed earlier with for-profit universities, The University of Phoenix, a notorious for-profit college, paid "\$2,225 per student on marketing and only \$892 per student on instruction", paying as much as \$150 for information and access to a potential victim. On the other hand, people who advocate for no restrictions on what can be sold argue that "the bad effects of markets in contested commodities

can be eliminated or at least ameliorated through appropriate regulation, and that anyway, the good effects of such markets... outweigh the bad” (Moriarty 7). Government regulation is a possible approach to lessening the negative impact of data collection and targeted advertising. Instead of ending targeted advertising, the government could regulate the actual predatory companies that exploit the system. O’Neil herself also argues for government regulation, but in a more sweeping way that targets the economic incentives of all information technology by “[measuring] hidden costs” (164). Even though regulation is often slow to adapt to changing landscapes and needs constant updating, it is still an effective tool for protecting the rights of consumers.

Another business ethics controversy that closely relates to targeted advertising is the controversy over advertising itself. Proponents of advertising argue that advertisements can help people gain autonomy over their purchases because “Their choices are more likely to satisfy their needs and desires if they have information about what is for sale, which advertising can provide” (Moriarty 7). One of the criteria for a perfect market system is the need for perfect information so consumers can make the best choices, and here it is argued that advertising helps achieve this goal. When this idea is applied to targeted advertising, an analogous example could be that if someone is in a new area, the location data from their phone could cause local advertisements to show up to better inform said person about what is available near them. However, when taken to the extreme, both advertising and targeted advertising could be argued to actually decrease consumer autonomy. For normal advertising, if someone did not want something until they saw an ad for it, it can be argued that the advertisement took away that person’s autonomy by influencing them to want something new. Similarly for targeted advertisements, if someone is only shown ads that an advertising algorithm decides they would like, their autonomy would be lost to the algorithm. In fact, this power could be used to affect more than just what people are interested in buying. According to a *New York Times* article, advertisers are also given the option to filter their potential viewers by their likely political affiliation (Thompson 5). This means that the information you see online from political ads could be tailored to directly address the problems you worry about or could exaggerate a negative aspect of their opponent in an attack ad. Unfortunately, it is hard to precisely gauge just how much more effective targeted ads are at influencing people’s minds, but the possibility for exploitation is still an ethical issue that needs to be dealt with. A potential

solution to this loss of autonomy could be to limit the amount of targeted advertising people receive. If it is mandated that some advertisements are random, not everything that a person sees would be determined by an algorithm. Alternatively, people could be given an option of choosing how much of the advertising they see is targeted and how much of it is random so that they can have more power and independence over their environment.

BEYOND ADVERTISEMENTS: WHAT IS PRIVACY AND WHY DOES IT MATTER?

Not all arguments about targeted advertising are related to the advertising itself. Many problems people have with targeted advertising are related to the breach in privacy that is necessary for it to happen in the first place. In order to understand those arguments, first the idea of “privacy” needs to be addressed. According to Herman Tavani, the Co-Director of the International Society for Ethics and Information Technology, the Restricted Access/Limited Control (RALC) theory of privacy is the best suited to handle the definition of privacy in this age of information. In RALC theory, someone is described to have privacy when they are in a situation in which they are protected from “intrusion, interference, and information access by others” (Tavani 10). However, privacy is then broken down into natural and normative privacy. Natural privacy is caused when individuals are protected through “natural” means, as in the way their environment can obscure them from others. Because natural privacy has no explicit rules or laws protecting it, it can be lost without being infringed upon. However, for normative privacy, there are established conventions, etiquettes, or laws that may confer individuals the right of privacy by restricting others from accessing specific information about them. In order for normative privacy to be established, people must have a certain amount of control over how their information is handled and have the option to waive their rights to privacy in certain cases. The argument for protecting privacy is related to the business ethics argument that “humanity should be treated always as an end, and never as a means...” (Moriarty 6). Infringing normative rights of privacy for the sake of making money would count as unethical behavior.

So how do the ethics of privacy apply specifically to online data mining? There is a clear diminishment in privacy in a natural sense, but because currently there are not many concrete rules in place for online

privacy, it is harder to determine whether or not privacy is being infringed upon in a normative sense. Thus, the circumstances of the online system determine whether or not privacy is infringed, and these circumstances must be made “clear and known to the persons affected by them” (Tavani 16). Through this application of the RALC privacy theory, Tavani rules that the solution to privacy on the internet is that the people “... must be told that information about them acquired via data mining could subsequently be used in ways they might not have explicitly authorized, and that these uses could threaten their privacy” (Tavani 16). In other words, people should be explicitly told that their data will be taken and they can either consent or leave. However, this solution has its flaws. Because internet services have become such a large part of our lives, deciding to opt out of a service such as Facebook and Google may become a largely impractical task. According to Facebook in 2016, its users spent on average 50 minutes a day on its platforms, which is quite a significant amount of time considering that this is only one social media company out of many and it already is the second most spent leisure activity done in the US, beating out both reading and exercise combined (Stewart 1). And since then, the amount of time spent on online platforms has only increased, and we rely on social media systems for communications in times of global crisis, such as the shutdowns and quarantines caused by the COVID-19 pandemic. The result of this solution may very well be something similar to what’s happening today, except online companies would now feel even more justified in their actions because their users have “consented”. Additionally, online companies would likely not adopt this resolution themselves, because they could alienate their users and hurt their profits without any real gain.

However, even if you consent to having your data being collected for advertising purposes, it does not address the risk of your private information being used for other ulterior motives. There have been several instances in which consumer privacy has been breached when data collected by companies have been used in ill-mannered ways. One recent example was the Cambridge Analytica scandal where a conservative data firm headquartered in England gathered the private information of 10 million people in the United States from Facebook to create “voter profiles” to influence the 2016 presidential election (Confessore). Data misuse like this not only violates consumer privacy by using their data in ways that are made obscure, but also leaves a significant impact on larger real-world situations. In politics and elections, methods such as

the gerrymandering of voting districts and targeted misinformation can transcend simple advertising. In addition, this detailed assortment of private information can be used negatively on a more personal scale. *The New York Times* was able to access a set of “anonymous” location data sent by specific apps on peoples phones and corroborated the data to public records to find out the identity of each person (Valentino). The troubling part of this article is that even when companies try to say that the information they sell is “anonymous”, it is simple for “those with access to the raw data — including employees or clients — [to] identify a person without consent. They could follow someone they knew, by pinpointing a phone that regularly spent time at that person’s home address” and abuse the information (Valentino). For both the Cambridge Analytica scandal and *The New York Times* exposé, people’s privacy and personal information are being compromised without their knowledge to negatively affect them. And the worst part is that it is very hard to correct these types of situations once they sprout up. Usually when it is revealed that personal information is being used harmfully, it is already too late to stop the damage because the data has already been leaked.

That is not to say that all infringements of privacy have negative intentions. In fact, there may be very good reasons for seemingly unreasonable actions. But in the case of ethics, it is necessary to consider the unintended effects of good intentions. For example, in the case of examining whether or not it would be ethical for people to share everything:

...one might at first think it obvious that sharing [what] I have gathered has better consequences for all affected than not sharing them... we must also consider whether the effect of the general practice of sharing [everything] will benefit all those affected or harm them by reducing the amount of [goods] gathered... (Singer 12-13)

As a result, good intentions or immediate results do not ultimately determine whether or not an action is ethical. Recently, there have been many proposed projects threatening personal freedom and information that are backed by good intentions. With a worldwide pandemic currently raging across the entire world, Google and Apple have worked together to create a “contact-tracing” app that could possibly help contain the virus by informing people whether or not they have had contact with someone who has recently been tested positive. But even with these seemingly pure intentions, it is not hard to imagine that the technology used for this

emergency would most likely not be dismantled afterwards and could still be used for mass surveillance long after the pandemic is over.

But ethically speaking, do companies have a moral responsibility to help us protect our privacy? Is it up to companies to stop people who buy our information from abusing it? According to some business ethicists, corporations do in fact have a role in helping the public through “corporate social responsibility” where “firms are ‘agents of justice’, much like states and individuals, and have duties to aid the needy [public]” because they have the resources and expertise necessary to do so (Moriarty 15-16). Thus, it can be argued that these large online corporations have a moral responsibility to uphold our online privacy in order to improve overall social welfare and prevent the exploitation of the public. However, even though corporations have this responsibility to uphold, it is up to the rest of us as “agents of justice” to hold them accountable and make sure their actions are not only ethical, but effective. Even in the face of scrutiny from events such as the aforementioned Cambridge Analytica scandal, Facebook still decided to keep up its political advertisements. Rob Leathern, Facebook’s director of product management overseeing the advertising integrity division, said “In the absence of regulation, Facebook and other companies are left to design their own policies... We have based ours on the principle that people should be able to hear from those who wish to lead them, warts and all, and that what they say should be scrutinized and debated in public” (Isaac and Cecilia). While Facebook’s idea of facilitating public debate has good intentions, many critics point out social media’s structure of misinformation, clickbait, and short responses actually works against this goal. Companies may try to act ethically, but when their solution is misdirected, the public and the government also need to respond in coordination to help fix the problem.

WHAT ELSE CAN BE DONE?

So what are some ways that internet privacy might be ethically protected? One proposed solution is the development of a “privacy notion”. Privacy notions are methods that can be used to protect privacy while still allowing enough information to be collected for ad networks to decide who to market to (Mandal 439). The ultimate goal for a privacy notion is that the information collected from potential consumers are decoupled from their specific identity and are impossible to trace back to their original state, similar to how data cryptography functions. This idea

would not solve the problems of people maliciously targeting vulnerable groups of people with advertisements, but it is a step in the right direction because it prevents abuse from data leakages and personal blackmail. Since this solution does add some layer of protection to users, it would help treat them as an “end” rather than a “means” and thus help targeted advertising be more ethically acceptable (Moriarty 6). Unfortunately, so far no privacy notions have been able to adequately balance the need for privacy and the need for revealing private information.

Another proposed solution is the idea of “user-tailored privacy” where websites have various levels of personal data collection, and based on the website user’s behavior or preferences, the amount of collected information automatically conforms to the “ideal” comfort level for that user (Knijnenburg). By being able to hide sensitive information that could lead to exploitation, such as demographic, financial, or medical information that the user may not want to be revealed, it is possible that this “user-tailored privacy” system could make a compromise between the website hosts and the users’ privacy preferences. However, this sort of system still has flaws in figuring out what the “ideal” comfort levels of each person is, and doing so perfectly would mean the system would already have to gather enough information to have a good understanding of the user’s personality.

CONCLUSION: THE FUTURE

In order to solve the problem of targeted advertising, the people need to question how much they value their privacy. Would we be willing to end targeted advertising and protect our data if it meant that free internet services lowered their quality or stopped being free? Or is the ease and convenience of the internet worth more than protecting our data double? There is unfortunately no perfect solution for both protecting privacy and keeping targeted advertising in place, so whichever solution is enacted should reflect what we value the most.

Targeted advertising is not going away in the foreseeable future. As more data gets put online, and algorithms get better at predicting people’s behaviors, targeted advertising will only become a bigger part of our lives. While there is currently no clear solution to fixing the problem, it is still important for all of us to learn more about privacy and recognize how companies are taking and using our data. Through education, those who are concerned with big data collection can take measures to protect

themselves individually, such as blocking third-party cookies and installing an ad-blocker. However, this is only a temporary solution because the consequences of this system do not end at advertising. The precedents of today influence the realities of tomorrow, and if the rules governing our online data are neither created nor enforced, it opens up the possibility of having our data used in much more harmful and exploitative practices. In order to protect our privacy and identities in the future, the groundwork for regulation should be laid down today.

WORKS CITED

- Booker, Brakkton. "Housing Department Slaps Facebook With Discrimination Charge." *NPR*, NPR, 28 Mar. 2019, www.npr.org/2019/03/28/707614254/hud-slaps-facebook-with-housing-discrimination-charge.
- Clement, Jessica. "Facebook Ad Revenue 2009-2018." *Statista*, Ströer, 28 Feb. 2020, www.statista.com/statistics/271258/facebooks-advertising-revenue-worldwide/.
- Confessore, Nicholas. "Cambridge Analytica and Facebook: The Scandal and the Fallout So Far." *The New York Times*, The New York Times, 4 Apr. 2018, www.nytimes.com/2018/04/04/us/politics/cambridge-analytica-scandal-fallout.html.
- Isaac, Mike, and Cecilia, Kang. "Facebook Says It Won't Back Down From Allowing Lies in Political Ads." *The New York Times*, The New York Times, 9 Jan. 2020, www.nytimes.com/2020/01/09/technology/facebook-political-ads-lies.html.
- Knijnenburg, Bart P. "Privacy? I Can't Even! Making a Case for User-Tailored Privacy." *IEEE Journals & Magazine*, 17 Aug. 2017, ieeexplore.ieee.org/abstract/document/8012348/authors.
- Mandal, Avradip, et al. "Privacy for targeted advertising." *2017 IEEE Conference on Communications and Network Security (CNS)*. IEEE, 2017.
- Moriarty, Jeffrey. "Business Ethics." *Stanford Encyclopedia of Philosophy*, Stanford University, 17 Nov. 2016, plato.stanford.edu/entries/ethics-business/.
- O'Neil, Cathy. *Weapons of Math Destruction : How Big Data Increases Inequality and Threatens Democracy*. First edition., Crown, 2016.
- Singer, Peter. *Practical ethics*. Cambridge University Press, 2011.
- Stewart, James. "Facebook Has 50 Minutes of Your Time Each Day. It Wants More." *The New York Times*, The New York Times, 5 May 2016, www.nytimes.com/2016/05/06/business/facebook-bends-the-rules-of-audience-engagement-to-its-advantage.html.
- Tavani, Herman T. "Philosophical theories of privacy: Implications for an adequate online privacy policy." *Metaphilosophy* 38.1 (2007): 1-22.
- Thompson, Stuart A. "These Ads Think They Know You." *The New York Times*, The New York Times, 30 Apr. 2019, www.nytimes.com/interactive/2019/04/30/opinion/privacy-targeted-advertising.html.
- Valentino-Devries, Jennifer, et al. "Your Apps Know Where You Were Last Night, and They're Not Keeping It Secret." *The New York Times*, The New York Times, 10 Dec. 2018, www.nytimes.com/interactive/2018/12/10/business/location-data-privacy-apps.html.

Kristine Le

Differently-Abled Individuals as Sexual Beings

ABSTRACT

Conversations about sexuality hardly ever address the desires of individuals with physical disabilities. With a long history in eugenics, the sexuality of mobility-limited Americans has been widely misunderstood by both the experts and the average person. This paper analyzes how the traditional medical model for individuals with mobility limitations has facilitated the production of an inaccurate narrative about the implications of being disabled. In addition, it exposes how the gap in medical school curriculum could be a potential agitator to the cultural neglect of the needs of individuals with physical disabilities. The ramifications of this neglect are highlighted in the lack of sex education and reproductive rights. The lack of sex education puts this group of people at a greater risk of sexual abuse and of catching harmful diseases. By failing to provide quality information on sexual health, society indirectly sets the tone for which groups are allowed to reproduce. In the case of individuals with physical disabilities, they are discouraged from exercising their reproductive rights to start a family. This has contributed to sterilization being the primary method of contraceptives for women with disabilities. While the eugenics movement may appear to be a part of a distant past, it is clear from the actions of medical professionals and sex educators that the themes of eugenics might not be so far off.

INTRODUCTION

Sex plays a prominent role in American culture through its continued representation in movies and music, and while it may seem like sex is a part of everyday life, not all Americans would agree. A large group of Americans, approximately 50 million according to the U.S. Census Bureau, are left out of this all-consuming sex culture: individuals with disabilities. This leads to the main questions: why do people with disabilities feel alienated from sex culture, and what are the implications? Individuals with disabilities have been neglected by mainstream society for a long time due to misconceptions about their bodies. This idea is broken down in Dr. Emily Lund's article "Asexuality and Disability: Strange but Compatible Bedfellows," in which she discusses the misconceptions

about mobility-limited individuals in the world of medicine. The stigma of the medical community ultimately trickles down into other aspects of the lives of people with disabilities, particularly when it comes to sex education. The sex education controversy is outlined in an analysis by Dr. Anne Tracy, a specialist in special education and disability studies, where she exposed the lack of proper sex education for differently-abled bodied adolescents. In addition, implications of the stigma manifest even further to create barriers that prevent individuals with disabilities from having the opportunity to exercise their reproductive rights. All of these factors work together to isolate Americans with physical disabilities from freely expressing their sexuality and body autonomy.

THE MEDICAL MODEL AND STIGMATIZATION

The discrimination against people with mobility limitations and disabilities is not a new phenomenon, and it is one with a long and tragic history. In the 20th century, the United States was actively engaged with eugenics, a movement in which individuals who were deemed “less desirable” were removed from the gene pool of the population by means of forced sterilization (Holland-Hall and Quint 436). These individuals included people of minority racial backgrounds, immigrants, the impoverished, and the disabled. The eugenics movement eventually achieved legal sanction from the Supreme Court in 1927 through its decision in *Buck v Bell* which upheld a “1924 Virginia statute that allowed state governments to sterilize people it considered genetically unfit” (Disability Justice). The court’s decision paved the way for other states to pass legislation in favor of eugenics and involuntary sterilization. *Buck v. Bell* has not been overturned by the Supreme Court to this day. However, it has been widely discredited and states have since changed their laws pertaining to forced sterilization. While eugenics is no longer discussed in mainstream media outlets, it remains prevalent on both a domestic and global scale. In particular, California continued its practice of involuntary sterilization of imprisoned women of minority backgrounds until as recently as 2013. This included women of color and women with disabilities, particularly intellectual disabilities (Wilson). The overall discrimination against mobility-limited individuals still remains in modern day society and has only evolved from its past of eugenics. For instance, selective abortions against fetuses with disabilities such as Down syndrome have become popularized through new advances in prescreening technology. Accord-

ing to Healthline, approximately 67% of pregnancies that are diagnosed with Down syndrome are terminated in the United States (“Abortion And Down Syndrome”). While this does not replicate the forced sterilization practices seen during the eugenics movement, attitudes toward individuals with disabilities have only slightly improved.

Mobility-limited individuals are misunderstood and stereotyped. As a result, they are greatly discriminated against and isolated from sex culture. A commonly reproduced stereotype is that individuals with physical disabilities are sick and must be cured of their disabilities. This concept is broken down in the article “Asexuality and Disability: Strange but Compatible Bedfellows” by Emily M. Lund, a professor at the University of Alabama who specializes in research on individuals with disabilities. Lund discusses how the concept of a physical disability being synonymous with an illness, as the stereotype warrants, is rooted in the traditional medical model of disabilities. The medical model works under the assumption that differently-abled bodies are “abnormal” compared to those without mobility limitations. In other words, they cannot function in the same way that a body that is free of limitations can, and therefore their bodies must be corrected to function “properly”. The model only views mobility-limited bodies based on actions they cannot perform in the same manner as bodies without limitations. There is no question that these two types of bodies function differently. However, what the model fails to acknowledge is that a person with a physical disability is capable of doing all the same actions an able body can. They just happen to do so in a different way. As a result of the medical model, a divide has been created between what is acceptable sexual behavior for physically limited people to engage in and what is acceptable for everyone else to engage in (Lund and Johnson 129). Sex is considered to be reserved for able-bodied individuals because their bodies are “normal” and “healthy.” By having medical professionals asserting the idea that individuals with disabilities have unhealthy bodies and thus should not have sex, it gives a false sense of credibility to an invalid concept. In reality, mobility-limited people merely have different bodies with varying capabilities in comparison to able-bodied people. These attitudes from medical professionals allow for the persistence of inaccurate stereotypes due to their continued support of the faulty medical model. An example of these stereotypes can be seen in how mobility-limited individuals are constantly misunderstood to be asexual in the eyes of able-bodied individuals. While there are individuals with physical disabilities who choose to identify as asexual, it is an inac-

curate assumption to state that all mobility-limited people are asexual. This assumption has greatly contributed to a growing platform within the Disabilities Rights movement and a growing number of individuals with disabilities speaking of their experience to spread awareness on its misleading nature. The prevalence of the stereotype that individuals with physical disabilities are asexual and cannot have sex was evident in a study in which researchers interviewed women with physical disabilities about how strangers responded to their pregnancies. A majority of women stated that strangers would commonly ask them how they were able to get pregnant (Iezzoni et al. 382). This demonstrates how many individuals are uneducated on mobility-limited individuals and their bodies. The types of questions asked shows how a lack of awareness contributes to the marginalization of individuals with physical disabilities in the realm of sex and reproductive rights.

Beyond the topic of sex, many attending physicians and residents report receiving insufficient to zero training on how to properly treat and assist patients with disabilities. In a survey conducted in California, only 22% of attending physicians reported having received any disability education while in medical school (Santoro et al. 754). This further perpetuates the use of the traditional medical model of disabilities because medical schools fail to educate future doctors on new ways to properly approach their disabled patients. By neglecting to formally educate the experts on what having a disability means, it facilitates the spread of misunderstandings about the lives of individuals with physical disabilities. To elaborate, the experts are speaking about and explaining the bodies of mobility-limited individuals, leading people to listen to their explanations because of their alleged expertise. As a result, the misconceptions about individuals with physical disabilities have spread and established the cultural divide between able-bodied and differently-abled people. While the failure to ensure that future physicians are getting properly trained on how to treat patients with disabilities may not be purposeful but rather a byproduct of the discriminatory ideals being reproduced throughout the decades, its implications are still widespread. It has facilitated the development of ableism in the US, in which able-bodied individuals are favored over those with disabilities. This social development parallels the opinions presented initially during the eugenics movement, where people valued those without disabilities and therefore sought to eliminate those with disabilities. Ableism simply masks the opinions of the eugenics movement by putting them under a new title. In American society,

ableism can be seen in everyday life: ranging from a lack of representation of mobility-limited individuals in popular culture to the inadequate amount of accessible examination tables for disabled patients. A “survey of almost 2,400 primary care facilities serving Medicaid patients in California noted that fewer than half of facilities were fully architecturally accessible; only 8.4% had accessible examination tables, and less than 4% had accessible weight scales” (Krahn et al. 2003). The idea of mobility-limited individuals being “abnormal” has created a disregard for their needs, and not only marginalizes them but puts them at an unnecessary risk of health complications.

THE IMPACT OF THE SEX EDUCATION GAP

A major contributor to the manifestation of these health complications is the gap in sex education for individuals with physical disabilities. A large part of a healthy sex life is a strong foundation in sexual education. A majority of children are taught sex education in school when they begin to enter puberty. In addition, they also receive information from their parents as well. According to the CDC, 38% of graduating high school students have had sex, with 46% reporting they did not use a condom the last time they were sexually active. Out of all other age groups, teens and young adults have the highest rates of contracting sexually transmitted disease, making up 21% of all new HIV diagnoses (“HIV/STD Prevention At A Glance”). Therefore, it is important to ensure that all children, regardless of their disability status, receive proper sex education to help decrease their risk of developing what should be easily avoidable health issues.

Differently-abled-bodied individuals report receiving inadequate sex education from healthcare providers and in school. Dr. Anne Tracy, a sex educator with a doctorate in special education and disabilities studies, reveals that “health educators are not required to learn how to teach students with disabilities and special education teachers are not required to learn the content/knowledge regarding health and sexual health education” (Shearer). This represents a similar issue future physicians experience with their medical school curriculum. Not only are the individuals with disabilities not receiving the proper information they need to protect their bodies, but the educators themselves are not held accountable for providing such information. This mimics the “glass ceiling” effect that women endure in the workforce. The “glass ceiling” effect describes the

invisible limits that hinder advancement for women in the workforce in comparison to their male counterparts. In the case of mobility-limited people, neglecting to include them in the conversation of sexual education, indirectly limits the information that they should know and have access to regarding sex and their bodies. Not only are schools failing to provide the proper information, but parents of children with disabilities are also shying away from the responsibility of delivering quality sex education. In a study, researchers evaluated the feelings of parents toward discussing sex with their disabled children. They analyzed the parents' feelings prior to them receiving proper information about sex education for individuals with disabilities and compared it with their feelings after receiving the information. Before the information, 60% of parents felt that their children did not have any sexual interest. This greatly contrasts with the after in which parents felt that 87% of their children did indeed have an interest in sex. In addition, at the beginning of the study, only 33% of parents reported having enough information to adequately teach their child about safe sex (Clatos and Asare 155). These numbers represent the large disconnect between how people think individuals with disabilities are compared to reality. Especially in the context of sexual health, this can be incredibly dangerous.

In comparison to able-bodied individuals, individuals with disabilities are at the highest risk of getting sexually abused. According to a report done by the U.S. Department of Justice, "children with disabilities are 3.4 times more likely than children without disabilities to be sexually abused" (Shearer). A large part of sex education revolves around the importance of consent. Therefore, by not openly discussing sex with individuals with disabilities, or even just the topic of consent and their susceptibility to abuse, it has made them an incredibly vulnerable group. The lack of sex education for mobility-limited people is not just important for the people dealing with disabilities but also for other people who could be made aware of this abuse and potentially save someone with a disability from a harmful situation. In tandem with protection from sexual abuse, individuals with disabilities should have the proper knowledge to know how to protect themselves from STDs. A condom is commonly discussed in classrooms as a way to protect oneself from unwanted pregnancy and STDs, however, educators fail to consider how an individual with a mobility limitation could have an issue with using one. This represents just one example of how individuals with disabilities are overlooked in sex education. The continued neglect to include mobility-limited individuals

in sex culture expands further when discussing reproductive rights.

CHALLENGES TO REPRODUCTIVE HEALTH

When it comes time to consider starting a family, many couples do not put much thought into how the process will go. Typically, it starts with getting pregnant, receiving the proper prenatal care, and having a quality birth plan. This is all a part of what is known as reproductive rights. According to the International Conference on Population and Development (ICPD), reproductive rights can be defined as the capacity for

all couples and individuals to decide freely and responsibly the number, spacing and timing of their children and to have the information and means to do so, and the right to attain the highest standard of sexual and reproductive health. (13)

In other words, reproductive rights refer to an individual's right to have children, to have access to the proper information about having a family, and to receive adequate reproductive health. The topic of reproductive rights is often overlooked by many able-bodied individuals because it is innately assumed that they will engage in sexual relationships and potentially start a family. For individuals with physical disabilities, the experience is quite different. As a result of the stigma surrounding differently-abled bodied individuals and sex, they are ignored when it comes to reproductive rights.

A major point that is emphasized in reproductive rights is the right to choose when to have a child. The main way that many women exercise this right is through the use of contraceptives. In comparison to able-bodied women, women with disabilities are more likely to utilize irreversible contraceptive methods in the form of female sterilization. A study of 7,505 women with disabilities, ages 25-34, found that 31% underwent female sterilization in contrast to 15.9% of able-bodied women who underwent the same operation (Mosher et al. 556). It is important to clarify that women with disabilities have the capacity to use semi-permanent forms of contraceptives such as the pill or IUD, but sterilization is the most selected option. This raises many questions because many women with disabilities reported just as much of a desire to have children as women without. This is outlined in a study that surveyed the opinions of disabled versus abled-bodied women, which found that 61% of able-bodied women and 60% of women with disabilities expressed feelings of

wanting a baby in the future (Bloom et al. 1). This suggests that there is some force encouraging women with disabilities to undergo permanent contraceptive methods rather than to leave the possibility of having a family open. The National League of Nursing exposed that “health care providers’ initial reactions to the idea of pregnancy is to try to discourage them from considering pregnancy, to assume that they are seeking termination of their pregnancy, or to make negative comments about them being irresponsible in considering pregnancy and motherhood” (“Pregnancy In Women With Disabilities”). By discouraging a specific group of women to not have children, a similar message that was pushed during the eugenics movement in the twentieth century is again being proposed. These negative attitudes toward mobility-limited women represent a cultural consciousness that seeks to prevent these women from starting families. This differs only slightly from the actions committed during the eugenics movements, where people were being forcefully sterilized. It has evolved from forced to coerced sterilization. This is a direct contradiction of the basic principles of reproductive rights and it undermines the dignity of the physically disabled in our culture.

Reproductive rights are especially important for disabled women because they are also more likely to suffer complications during pregnancy and childbirth. Therefore, it is imperative to ensure they have a proper support system in place to have a successful pregnancy and birth. In a study that analyzed the experiences of pregnant women with impaired mobility, problems with wheelchair fit and “increased risks of tipping or other difficulties as pregnancy advanced” in addition to “significant shortness of breath” and increases in uncontrolled muscles spasms (Iezzoni et al. 137) were all noted occurrences. While these are definitely real issues, they are expected considering the circumstances of having a physical disability. An individual with a physical disability will require different care than that of a person without a disability. However, many women reported that their physicians did not have enough knowledge to help them manage their pregnancies, instead of having to rely on information from other women who had gone through the process (Mitra 460). Rather than assigning blame to the disability, it is better to assess how physicians are making an effort to ensure that women who wish to start a family have the capacity to do so. For example, in the instance of the wheelchair issue, it is possible that a different type of wheelchair could be made to better accommodate the mobility disability alongside the bodily changes that occur during pregnancies.

Whether it is with the help of medical staff or not, mobility-limited women will still have the drive to have children. Ensuring that their reproductive rights are protected will help to make sure that they do so in a safe manner. Acknowledging the sexuality of individuals could help pave the way to solidify their ability to have a family.

UPHOLDING DIGNITY FOR ALL PEOPLE

Merging individuals with disabilities into American sex culture represents the start to solving a much bigger issue. It allows us to attack ableism head-on by dismantling the idea that sex and the right to have a family is something reserved only for abled-bodies. By emphasizing the shared connection between the abled and disabled and focusing on their similar feelings, these groups can be brought closer together and gain a better understanding of one another. This is crucial if any progress is to be made to ensure that individuals with physical disabilities are provided the proper information to safely have sex and start a family, should they choose to do so. These rights are basic, and by failing to respect the desires of mobility-limited Americans, society is putting them at unnecessary risk of getting abused and developing health complications. These issues have serious moral ramifications due to the fact that these discriminatory attitudes parallel the opinions initially presented in the eugenics movement. Rather than evolving away from these ideas and learning from the past, there is the possibility of relapsing into a dark part of history.

Sex is a very beautiful thing. It allows us to be vulnerable and connects us to another person in a very intimate way. There are many different types of relationships that people will experience throughout their lives, however, a sexual relationship is especially unique in that it bonds us to our partner. Isolating an entire group of people from being able to form these bonds does nothing but deprive them of something deeply rooted in the human experience. More importantly, it keeps society divided from one another.

WORKS CITED

Becker, Heather, et al. "Reproductive Health Care Experiences of Women with Physical Disabilities: A Qualitative Study." *Archives of Physical Medicine and Rehabilitation*, vol. 78, no. 12, Elsevier BV, 1997, pp. S26–S33, doi:10.1016/s0003-9993(97)90218-5.

- Bloom, Tina L, et al. "Fertility Desires and Intentions Among U.S. Women by Disability Status: Findings from the 2011-2013 National Survey of Family Growth." *Maternal and Child Health Journal*, U.S. National Library of Medicine, Aug. 2017, www.ncbi.nlm.nih.gov/pmc/articles/PMC5517347/.
- Center for Disease Control and Prevention. "HIV/STD Prevention At A Glance | About Us | Adolescent And School Health | CDC". *cdc.gov*, 2020, https://www.cdc.gov/healthyyouth/about/hivstd_prevention.htm. Accessed 14 Nov 2020.
- Clatos, Kristen, and Matthew Asare. "Sexuality Education Intervention for Parents of Children with Disabilities: A Pilot Training Program." *American Journal of Health Studies*, vol. 31, no. 3, American Journal of Health Studies, June 2016, pp. 151–62.
- Disability Justice. "The Right To Self-Determination: Freedom From Involuntary Sterilization | Disability Justice". *Disability Justice*, 2020, <https://disability-justice.org/right-to-self-determination-freedom-from-involuntary-sterilization/#cite-note-4>.
- Holland-Hall, Cynthia, and Elisabeth H. Quint. "Sexuality and Disability in Adolescents." *Pediatric Clinics of North America*, vol. 64, no. 2, Elsevier Inc, 2016, pp. 435–49, doi:10.1016/j.pcl.2016.11.011.
- Iezzoni, Lisa I, et al. "Effects of Disability on Pregnancy Experiences Among Women with Impaired Mobility." *Acta Obstetrica et Gynecologica Scandinavica*, vol. 94, no. 2, Wiley Subscription Services, Inc, Feb. 2015, pp. 133–40, doi:10.1111/aogs.12544.
- Iezzoni, Lisa I, et al. "How Did That Happen? Public Responses to Women with Mobility Disability During Pregnancy." *Disability and Health Journal*, vol. 8, no. 3, Elsevier BV, 2015, pp. 380–87, doi:10.1016/j.dhjo.2015.02.002.
- Krahn, Gloria L., et al. "Persons With Disabilities as an Unrecognized Health Disparity Population." *American Journal of Public Health* (1971), vol. 105, no. S2, American Public Health Association, 2015, pp. S198–S206, doi:10.2105/ajph.2014.302182.
- Lund, Emily M., and Bayley A. Johnson. "Asexuality and Disability: Strange but Compatible Bedfellows." *Sexuality and Disability*, vol. 33, no. 1, Springer Science and Business Media LLC, 2014, pp. 123–32, doi:10.1007/s11195-014-9378-0.
- Mitra, Monika, et al. "Pregnancy Among Women with Physical Disabilities: Unmet Needs and Recommendations on Navigating Pregnancy." *Disability and Health Journal*, vol. 9, no. 3, Elsevier BV, 2016, pp. 457–63, doi:10.1016/j.dhjo.2015.12.007.
- Mosher, William, et al. "Contraceptive Use by Disability Status: New National Estimates from the National Survey of Family Growth." *Contraception* (Stoneham), vol. 97, no. 6, Elsevier BV, 2018, pp. 552–58, doi:10.1016/j.contraception.2018.03.031.
- "Reproductive Rights Are Human Rights: A Handbook For National Human Rights Institutions". *Ohchr.Org*, 2014, <https://www.ohchr.org/Documents/Publications/NHRIHandbook.pdf>.
- Santorio, Jonathan D., et al. "Disability in US Medical Education: Disparities, Programmes and Future Directions." *Health Education Journal*, vol. 76, no. 6, SAGE Publications, Oct. 2017, pp. 753–59, doi:10.1177/0017896917712299.
- Shearer, Nicole. "Sexual Health Education For Individuals With Disabilities: A Call To Action" | University Of Nevada, Reno". *University Of Nevada, Reno*, 2019, <https://www.unr.edu/nevada-today/news/2019/sexual-health-for-individuals-with-disabilities>.

- Smeltzer C., Suzanne, et al. "Pregnancy In Women With Disabilities". *Villanova University College of Nursing*, nln.org, 2020, <http://www.nln.org/professional-development-programs/teaching-resources/ace-d/additional-resources/pregnancy-in-women-with-disabilities>.
- United States, Census Bureau. "Nearly 1 In 5 People Have A Disability In The U.S., Census Bureau Reports - Miscellaneous - Newsroom - U.S. Census Bureau". *Census.Gov*, 2012, <https://www.census.gov/newsroom/releases/archives/miscellaneous/cb12-134.html#:~:text=About%2056.7%20million%20people%20%E2%80%94%2019,by%20the%20U.S.%20Census%20Bureau>.
- Wakeman, Jessica. "Abortion And Down Syndrome". *Healthline*, 2020, <https://www.healthline.com/health-news/the-debate-over-terminating-down-syndrome-pregnancies#Troubling-diagnosis>.
- Wilson, Robert A. "Eugenics Today: Where Eugenic Sterilisation Continues Now – Robert A Wilson | Aeon Essays". *Aeon*, 2018, <https://aeon.co/essays/eugenics-today-where-eugenic-sterilisation-continues-now>.

Maryjo Hobeika

Which is it this time? E. Coli or Listeria?

ABSTRACT

“Here are the steps to food safety...” is what the CDC recommends you do to reduce pathogen count and contamination within homes and restaurants. But what does the government do to contribute to your food safety? The agriculture practices regulated by government officials are unethical according to their contribution to safety. These practices, including but not limited to food cleaning, factory farming, manure and fertilizer usage, and genetically modified organisms (GMOs) cause a cascade of safety issues that concern people, the environment, and animals. According to ethical theories such as Utilitarianism, Deontology, Tragedy of the Commons, Need, and Equality, these practices are deceitful and unjust. Even when companies are providing for themselves and workers, these practices are considered unregulated and therefore harmful.

INTRODUCTION TO FOOD SAFETY AND ETHICS

News on food-borne illness outbreaks has desensitized consumers. How many times does one have to hear there has been yet another foodborne outbreak in Iceberg lettuce or Honeydew melon? As a society, American citizens who have not been afflicted with food-borne illness have become accustomed to hearing about outbreaks and trusting they will not be affected. On the contrary, they are, and heavily so. Food Safety encompasses practices that overlap all areas of food, from farm to production to consumption to all the byproducts of the food chain. These practices are so widespread and intricate that sometimes, it seems impossible to play catch up with food regulation. The Centers for Disease Control and Prevention, or CDC, focuses on the consumer side of food safety by providing consumers with knowledge on food-borne outbreaks and properly preparing and storing certain foods. However, much of the practices concerning food safety happen before the food reaches consumers. America’s legal food regulators, the Food and Drug Administration (FDA) and the U.S. Department of Agriculture (USDA), oversee agriculture practices, including food cleaning, factory farming, manures and

fertilizers, and genetically modified organisms (GMOs) which are further analyzed in this research for ethical adherence to food safety. In the context of food safety, the discussion of ethics circulates around the attempt to find the optimal distribution of agriculture practices among competing ends. The question then that arises is whether the FDA and USDA should allow certain agricultural and food practices. The ethicalities that will be analyzed alongside this research use Steven Pinker's "The Moral Instinct," where he discusses the five themes of moral sense: freedom from harm, fairness (or equality), community (or group loyalty), respect of authority, and purity (Pinker). In the policies that seem like the FDA and USDA don't choose the right path, the ethical theories of Equality, Need, Utilitarianism, Deontology, Loyalty to Community, Minimax, Tragedy of the Commons, and Fiduciary Duty are also discussed to determine if what they do is unethical or ethical. Ultimately, these findings reveal that it is unethical to allow certain agriculture and food practices according to the safety of the environment, consumer, worker, and animal.

ARE FOOD CLEANING PRACTICES SAFE?

Food safety is important because there is a growing percentage of raw vegetable and fruit consumption around the world that are susceptible to pathogens such as *E. Coli* 0157:H7, *Salmonella* spp. (several species), *Staphylococcus aureus*, *Campylobacter* spp., and *Listeria monocytogenes*. In the U.S. alone, the number of produce outbreaks has not declined, showing that there has been an insignificant change in the U.S. food system (Wadamori 1398). When exposed to these pathogens, consumers with underlying health conditions and immunocompromised systems have a higher chance of hospitalization and fatality. To combat these pathogens, cleaning practices for fresh produce are implemented, helping to decrease the colony forming units (cfu), or the pathogen count. They include a variety of methods that are determinant upon the optimal acidity of the environment, redox reactions applied to the produce, and antimicrobial agents that are both natural and artificial (Wadamori). Regarding the artificial antimicrobial agents, the FDA lists many types of preservatives or additives "such as nitrates and nitrites, sulfur dioxide, acetic acid and nisin" (Wadamori 1400). It is evident that there are many methods that help kill off coliforms of pathogens. However, as there are still outbreaks, it remains concerning that there could be even more if it weren't for these methods.

Instead of fixing the root of these problems, this practice in cleaning produce is like adding a band-aid to a stab wound. An instance of this can be clearly seen in a study led by Muhandiramlage at The University of Adelaide. In this study, chlorine is applied to isolate *Campylobacter*, a bacterium causing campylobacteriosis or diarrhea, to analyze broiler chicken carcasses' pathogen responses count. It was concluded that this cleaning process does not always eliminate *Campylobacter* contamination and has a substantial chance of resuscitating the bacterium. When 8 ppm (parts per million) of chlorine is added to a bacterial concentration of 108 CFU/ml, 6 out of 6 isolates were resuscitated after the 24 and 48-hour count, meaning more chlorine would be needed to eliminate bacteria resuscitation (Muhandiramlage). As meats can be improperly cooked or can lead to cross-contamination, this method leads us to ask if it is ethical to continue to focus on cleaning after the mess has been made or before. If food production companies focus on cleaning up along the way before the foods reach their end product, there is a chance that fewer people would get sick, whether it be consumers or workers. The ethical theory of Utilitarianism by Jeremy Bentham applies here, as it states that companies should choose the greatest good for the greatest number of people. In other words, if the system is changed, then more lives would be saved from illness or fatality. In this case, companies' aim to reduce costs is more important than engaging in safer food cleaning practices. However, to blame the industry is to blame the regulations provided by government authorities like the FDA. The FDA has questionable regulations like the GRAS label (Generally Regarded As Safe), in which chemicals are approved for usage within minor limitations. Chlorine, which the study confirmed is applied to clean chickens, is an example of a chemical that is considered GRAS (Muhandiramlage). The meaning of "generally" is a prime way of abusing a system by confusing consumers and risks the consumer's health, all in the name of producing up to code products. This word gives the industries freedom to mold the standards to fit their preferences, therefore allowing companies to use others as a means to an end, which encompasses the ethical theory of Deontology by Immanuel Kant. When discussing the logistics of a product being safe to ingest, there can be no "generally", as food safety standards demand specifics to avoid pathogen outbreaks and protect the public. If it's *generally* acceptable for the public to ingest, then it must probably be *generally* dangerous for the workers who have to work in these acidified, chemical-based conditions. In the end, the FDA is trying to help food companies even if it is not the

best situation via death or sick count. The importance of fresh produce would suggest that the FDA and USDA would regulate these agriculture practices extensively. Instead, that is not always the case, not even with meat. It took years to mandate the FDA Food Safety Modernization Act (FSMA), which included important points from previously promoted Kevin's Law, that would have given the USDA the power to close down plants that contained contaminated food (Prager). Instead, this demonstrates there is no respect to the authority that is our governmental food regulators. To add to the injury, the increasing amounts of pathogens in these produce and meat are also direct results of agriculture practices such as factory farming and manure usage.

IS FACTORY FARMING SAFE?

Factory Farming is an industrial farming system that densely confines animals in indoor places under strict regulations. Factory Farming is meant to mimic an assembly line where animals feed and excrete in the same area. These areas are pathogen and bacterial hotspots where animals can easily contract diseases. In order to prevent animal sickness from occurring, they are fed with antibiotics and thus form "...resistance genes to these antibiotics... either for disease control or as feed supplements or growth promoters [33, 40]" (Tatsing Foka 11). These antibiotics are needed for the animals to keep gaining weight so manufacturers would be able to profit off of their meat. The vast usage of antibiotics can be seen through sheer statistics such as in 2013, where about 80% of all antibiotics in the U.S. sold were intended for animals (Blanchette 81). The extensive usage of antibiotics is a testament to the importance of this safety practice because it shows how factory farming is not sustainable for animals or humans.

The food safety consequence of the overuse of these drugs is the antibiotic resistance formed in humans who have ingested the meat and established a type of contact with the bacteria. Forms of contamination are mentioned in a study conducted at North-West University of South Africa, which describes how "...manure and soil or water contaminated with animals' excreta are hotspots of isolates carrying mobile genetic resistance elements that can be transferred horizontally and vertically to animals/humans..." and that the entire food chain is affected (Tatsing Foka 11). The concern for this consequence is horizontal gene transfer, or HGT, a method in which genetic material is transferred independent of

reproduction to a living cell or organism followed by its expression. What this means is that the genes of the antibiotics were transferred to the human body via ingestion of food, water, or even air. As a result, when the human body contracts a certain infection, the antibiotics provided by health care cannot destroy the bacteria and can lead to a cascade of problems, especially for those that are immunocompromised. When contracting these antibiotic genes, HGT can occur as easily through the inhalation of living dust that can reach people at least 3.5 km away, which is the perfect distance for inhalation between individuals and fields (Blanchette 81). When it comes to workers that deal with these animals within 1 meter away, many of them form antibiotic resistance. This is the cherry on top of their already non-unionized workforce, worsened by other hazardous workplace practices like ammonia volatilization and acidification (Blanchette 96). The United States National Safety Council ranks agriculture work among the three most dangerous occupations in the U.S. with 20,000 to 300,000 who get pesticide poisoning each year (International Labour Organization). This doesn't benefit workers who are regarded as "the poorest of the rural poor" (International Labour Organization). Additionally, these cramped and unsanitary conditions lead to easily transmissible viruses, like Norovirus or Hepatitis A virus, causing concern for the contamination of fresh produce (Wadamori 1397). Cross-contamination and antibiotic resistance are the main culprits of factory farming. In addition to manure pathogen hotspots, animal stress is another factor that produces even more pathogens to the farm. It has been researched that factory farming "has also been linked with higher *Campylobacter* loads being shed in broiler [chicken] feces" (Muhandiramlage). This issue creates a cycle all due to over-cramming animals as a means of factory farming and producing more meat. As consumers have a higher risk of contracting a bacterium, public health is disadvantaged while farm productivity is prioritized.

Antibiotic abuse is a concrete example of the ethical theory Tragedy of the Commons by Garrett Hardin, which states if left unchecked, antibiotic usage will be used in excess and ruin the practice at the cost of all companies using it, all in the name of profit. Left unregulated, the antibiotic usage that was readily available to animal providers created problems for consumers. When it came to workers, they were not treated as equal standards with consumers. Instead, these workers had the highest antibiotic resistance, while consumers had a lower chance of acquiring it. Even though each job has its hazards, food handling should

be the safest of these hazards. Since all people have the need and a right to good health, it is not ethical for factory farming to continue in practice if its byproducts lead to a few very significant problems. In this context, the ethical concepts of Need and Equality offer a clear fight for the justice of the people. If the argument of the ethical theory of Fiduciary Duty arises, stating that the employees of the firm have a duty to maximize profits for the firm, then the ethical theory of Loyalty to Community counters it. The food industry's workforce should not have their health harmed, and if they do, they should have legal rights and insurance to treat their health at the company's expense. Extending that over to the animals, food factory farms should lean towards protecting their animal's rights, as well, because the animals are what feeds the community of meat-eaters. If a food manufacturer is selling food, they should take integrity in their work. From the antibiotic resistance to the unethical labor practices to the unethical animal practices, the question of why it is still ethical for the FDA and the USDA to allow these practices with full knowledge of the dangers for workers and health safety for consumers arises.

ARE MANURE AND FERTILIZERS SAFE?

Farm animals excrete manure made of methane, bacteria, and other resources. In some farms, this manure is used as fertilizer, which exposes pathogens to soil and can lead to fresh produce contamination. As mentioned in Wadamori's study, the presence of these pathogens can be difficult to clean and can lead to serious food illness outbreaks. Despite this, the FDA only "strongly encouraged the use of passive or active treatments such as composting and pasteurization to limit the viability of these microorganisms before applying them to the soil" (Çekiç 1562)." The keyword here is "encouraged", meaning optional. This is significant because it shows how the FDA does not make it mandatory for manure to be cleaned before using it on crops. The cause of the outbreaks of food-borne illness due to pathogens in produce can be easily regulated by the FDA if they were stricter in their regulations and demanded the cleanliness of the manure.

Manure fertilizer practices are exacerbated by practices like factory farming which causes pathogenic infections due to unsanitary environments that contaminate more than fresh produce. According to the World Health Organization (WHO), practices like these are a production hazard that can lead to cross-contamination (Wadamori 1396). For

instance, runoff from these contaminated feces is the cause of important environmental disasters through phosphorus and nitrogen, like the dead zones formed as oxygen-depleting eutrophication and algal blooms in areas like the Gulf of Mexico (Blanchette 85). This concerns our food safety as well as our environmental health, as most of our oxygen comes from the ocean, and dead zones can lead to a depletion of oxygen and the death of aquatic life — nearing extinction in the plant's food chain.

Another way the FDA shows its ineffectiveness is by circumventing the Food Safety Modernization Act of 2011 that required a 270-day waiting period between applying uncomposted manure and harvesting for all farmers by changing it to a 120-day interval (Çekiç 1562). A study conducted at the University of Florida, mimicking the field and lab manure and soil experiments during the fall and summer season, shows that *E. Coli* demonstrates persistence up to 280 in the fall days in a field setting and 210 at 30°C days in a lab setting (Çekiç 1566). This clearly demonstrates that the original safety regulation of 270 days would have been a safer appeal, as the pathogen continued to persist with the increasing amounts of manure added. The regulation on manure usage is interesting because the USDA's requirement for soil fertility states that uncomposted manure can still be used with no wait time even when the crop is not intended for human consumption, but only when it is intended for animal consumption (USDA). This manure usage is unethical, as seen through the ethical theory Minimax by John Rawls, stating everyone should put a veil of ignorance over their faces so as not to remember their position in society and therefore not be biased when making a decision for the good of society. The science is clear in this case, as the manure consequences are undermined. The question is, why isn't the decision obvious to keep the time frame of manure? Under the notion that policymakers turned into concerned consumers, they would have kept the original time frame. However, time is money. The money that food and agriculture companies value more than the safety of their consumers shows in their unjustified perspective of the ethical theory of Fiduciary Duty to maximize their own profits.

This economic justification is interesting because this regulation that clearly helps companies was developed by public policy workers whose best interest should be for the safety of consumers. Already it is seen in documentaries like *Food Inc* by Robert Kenner that these FDA and USDA workers have associations with food companies outside their office (Prager). Thus, when the loyalties of the policy regulators are

questioned, the practices they instill should be reconsidered because their ethical standing is untrustworthy. According to the theory of Loyalty to Community, these infidelities are unethical, as policymakers are supposed to work with the consumer's benefit in mind. Unstable loyalty contributes to the negligence of the regulations that are causing environmental concerns. The issue then leads to the discussion of another ethical theory over what humans require to survive: oxygen. As mentioned in the previous paragraph, this environmental health should be a priority for all humans. However, through the actions of regulators, the choice of money over survival demonstrates the differences in what people perceive as their needs.

ARE GENETICALLY MODIFIED FOODS (GMOS) SAFE?

GMOs are foods that have had their genetic material changed through non-natural ways. A prenotion that consumers have of GMOs is that they are unsafe to eat. According to a study led by Barbara de Santis and many food science experts, GMOs can be evaluated based on their food allergenicity, capacity of horizontal gene transfer (HGT), and quantity of mycotoxins (a toxic metabolite that can cause disease or death in organisms) (de Santis). In terms of occurrence, mycotoxins are not prevalent, food allergens are prevalent for the type of foods, whether GMO or non, and horizontal gene transfer is arguably prevalent (de Santis). The study suggested that "the risk of transfer of transgenic DNA is equal to that for non-transgenic DNA and that unintended horizontal gene transfer is unlikely to raise health concerns." (de Santis 58). In other words, no matter the DNA, the risk of transferring genes is low. A main concern of HGT is that the DNA transfer to animals from GM crops would occur in the GI tract, affecting gut bacteria. Although some plant DNA fragments were found in the intestinal tract, none were found in the milk, egg, or blood of the animal, suggesting that HGT does not affect the animal's bodily functions. However, the scientists also explain that the "composition of this microbial community is host specific, evolves over time and is subject to both endogenous and exogenous modifications," advising there is always a scenario in which an effect can occur (de Santis 58). However, the surveillance of these effects is so wide scale that the study suggests it would be "considered out of proportion to set up a systematic process of data collection only for GM issues" (de Santis 58). The

security and validity of these GM products require large corporations to protect themselves because the products make up two-thirds of shelf-life products (XX). In this case, it's no wonder that the FDA has not unregulated GMO labeling. With the uncertainty of safety and the GMO prejudice, it's probably economically safer to ask the consumer to trust GMOs. From the ethical perspective of Fiduciary Duty, these food companies are protecting themselves and their employees. But is this ethical when there is no unified spokes group of the science community saying that GMOs are admissible?

It is no surprise that consumers protest and demand the right to have labeling of GMOs on all food products, even if they do not present a major food safety concern. In the cases where there are positive attributes to GMOs, there are still downsides for each benefit. For instance, the study, led by de Santis, suggests how GM feed for animals can reduce mycotoxins in contamination. However, this finding is followed by sharing that low levels of mycotoxins don't mean that levels are under regulation (de Santis 52). This shows that the scientists still have their doubts about GM feed, so it is understandable that GMOs are still demonized in food consumerism culture. On the other hand, even if GMOs are deemed perfectly safe for consumers, which, through supermarkets, they are, how they are being used is the bulk of the issue. With the usage of GM feed, animals are fed food sources that are cheap alternatives to their natural feed to build fat and muscle, resulting in higher levels of these mycotoxins in their tracts that also cause other sources of gastrointestinal (GI) issues. These feed products become toxic waste that can cross-contaminate, reach human consumers, and create GI diseases and infections. In other words, the concern is not whether the GMO is deemed unsafe but how it is being used. According to the ethical theory of Tragedy of the Commons, these food companies have taken advantage of the consumer's ignorance for so long that they have set themselves in a commitment that will be very difficult to reverse.

Another practice GMOs are used with is the implementation of pesticide or insecticide in plants. The usage of GMOs creates a decrease in pesticide usage, which is beneficial for the soil and water streams. However, the usage of GMOs is also probable in creating resistant insects that would require a more developed pesticide or insecticide to rid the pests (Purdue). Therefore, again we see, the usage of GMOs does not assist agriculture practices without consequence. Through the chain of events, it would be deemed safer for humans to buy

products that are not GMO to avoid products with pesticide resistance. In this case, it is important to educate the consumer that getting products listed as organic would be a way to avoid these harmful pesticides (McEvoy). The government does not explain to consumers that pesticide usage on GMOs should be deemed worse than the GMO product itself. It is not ethical that GMOs and pesticides are utilized and placed into foods without the knowledge of the consumer. This omission of truth represents Kant's Deontology. Food companies lose their transparency with their consumers by lying to them about what their food is really made out of. If companies do not want to lose profit by scaring off customers, more extensive research about GMOs should be done and appropriately provided to the public. If there is nothing to hide, then there is everything to gain by a new scientific achievement.

CONCLUDING REMARKS

Ultimately, through the theories presented, it is unethical to allow certain agriculture and food practices because it is unsafe and unsustainable for the environment, consumer, worker, and animal. The practices that entail food safety are important factors in determining the outcome of foods and, when left unregulated or practiced, cause many unethical consequences along the way. For instance, both workers and animals are used as a means to companies' end in their exposure to unsanitary working conditions, according to the ethical theory of Deontology. Additionally, policy workers in the FDA and USDA are omitting the truth about GMO labeling to consumers and have questionable loyalties as they are giving food industries plenty of freedom. These loyalties are questionable because the mandates and actions of these policy workers are framed as if they support the consumer but really aim to confuse them. Even though profit through the ethical theory of Fiduciary Duty is used to justify companies' practices, it has outweighed the safety of humans and the environment and is therefore unethical. This is where the ethical theory of Tragedy of the Commons is apparent, as it exposes the abuse of power that led to disasters like human antibiotic resistance, oxygen dead zones in the sea, pathogen contamination from soil runoff, and GMO and insecticide-resistant insects. To continue these practices and remain reliant on consumer food safety practices is to break the code of moral ethics discussed by Pinker and many others.

WORK CITED

- Blanchette, Alex. "Living Waste and the Labor of Toxic Health on American Factory Farms." *Medical Anthropology Quarterly*, vol. 33, no. 1, 2019, pp. 80–100, doi:10.1111/maq.12491.
- CDC. "Food Safety Home Page." *Centers for Disease Control and Prevention*, Centers for Disease Control and Prevention, 4 Mar. 2021, www.cdc.gov/foodsafety/.
- Çekiç, Samantha K, et al. "Persistence of Indigenous Escherichia Coli in Raw Bovine Manure Amended Soil." *Journal of Food Protection*, vol. 80, no. 9, Allen Press Publishing Services, 2017, p. 1562–1573, doi:10.4315/0362-028XJFP-17-033.
- de Santis, Barbara, et al. "Case Studies on Genetically Modified Organisms (GMOs): Potential Risk Scenarios and Associated Health Indicators." *Food and Chemical Toxicology*, vol. 117, Elsevier Ltd, 2018, pp. 36–65, doi:10.1016/j.fct.2017.08.033.
- International Labour Organization (ILO). (1996, September 23). *Agricultural Wage Workers: The poorest of the rural poor*. International Labour Organization, 21 November 2021, https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_008067/lang--en/index.htm.
- McEvoy, M. (2019, March 13). Organic 101: What the USDA Organic Label Means. *United States Department of Agriculture*. <https://www.usda.gov/media/blog/2012/03/22/-organic-101-what-usda-organic-label-means>.
- Muhandiramlage, Gayani Kuriyawee, et al. "Chlorine Induces Physiological and Morphological Changes on Chicken Meat Campylobacter Isolates." *Frontiers in Microbiology*, vol. 11, Frontiers Media S.A, 2020, pp. 503–503, doi:10.3389/fmicb.2020.00503.
- Pinker, Steven. "The Moral Instinct." *New York Times* (1923-Current File), New York Times Company, 2008.
- Prager, Brad. "Food, Inc. (2008). Directed by Robert Kenner. 94 Min. (<http://www.foodincmovie.com/>)." *Journal of Mass Media Ethics*, vol. 24, no. 4, Taylor & Francis Group, 2009, pp. 312–13, doi:10.1080/08900520903332808.
- Purdue Agriculture. *How Do Gmos Affect Insects?* ag.purdue.edu/GMOs/Pages/GMOsandInsects.aspx.
- Tatsing Foka, Frank Eric, and Collins Njie Ateba. "Detection of Virulence Genes in Multidrug Resistant Enterococci Isolated from Feedlots Dairy and Beef Cattle: Implications for Human Health and Food Safety." *BioMed Research International*, vol. 2019, Hindawi, 2019, pp. 5921840–13, doi:10.1155/2019/5921840.
- USDA. "§205.203 Soil Fertility and Crop Nutrient Management Practice Standard." *Electronic Code of Federal Regulations* (ECFR), United States Department of Agriculture, www.ecfr.gov/cgi-bin/text-idx?SID=c0bf2abc2068788ea7b2ef7e2b-3fbacc&mc=true&node=se7.3.205_1203&rgn=div8.
- Wadamori, Yukiko, et al. "Outbreaks and Factors Influencing Microbiological Contamination of Fresh Produce." *Journal of the Science of Food and Agriculture*, vol. 97, no. 5, John Wiley & Sons, Ltd, 2017, pp. 1396–403, doi:10.1002/jfsa.8125.

Amy Zheng

The Sharing of Culture Through the Globalization of K-pop

ABSTRACT

Is Korean culture now considered mainstream? With the growing popularity of Korean culture being spread on a worldwide scale, it is important to note the factors that contribute to its popularity, and what it signifies in a diversifying culture. From the food, dramas, and music, Korea has created beloved products that introduced the world to Korean culture. Social media, fandom, and language are all factors in how Korean culture and Korean popular music have grown on a large scale. Korean culture has been adapted by global influences and has been made into a shared culture that non-Koreans can appreciate as well, not just as a purchased product but as an enjoyable collective experience as well. The genre of Korean popular music, known as K-pop, is especially well-known, being a major factor in allowing for this intermingling of cultures to exist across continents. These cultural influences create a sense of community on a global scale where fans and non-fans can share their admiration and appreciation for Korean culture even without knowing the language. This paper will delve into the ways K-pop is successful at globalizing itself and Korean culture, along with how K-pop has broken through international barriers and evolved into a shared culture.

“GANGNAM STYLE” AS A GLOBAL BREAKTHROUGH

PSY’s “Gangnam Style” was a driving force in allowing K-pop to become known on a global level. Released on July 15th, 2012, “Gangnam Style” became a global phenomenon within two months. The song quickly rose to number two on the Billboard Hot 100 and became the first YouTube video “in the history of the internet” (Gruger) to surpass one billion views in August 2012. This was not only a huge milestone for PSY but all of K-pop, as it brought more exposure to the relatively unknown music genre. According to YouTube statistics, following the release of “Gangnam Style”, videos featuring K-pop garnered “three [times] the viewership” (Allocca) than the previous year, increasing from 2.2 billion views to over

7 billion views. These statistics demonstrate the revolutionary impact of “Gangnam Style” and show that it helped other K-pop artists gain global attention as well, serving as a pioneer for the rapid success of K-pop on a global level.

The impact of “Gangnam Style” allowed for people to gain interest in the genre of K-pop. However, despite the song’s record-breaking achievements it also brought backlash and mockery to the genre (and other Asian cultures). The support of “Gangnam Style” was highly positive and many found joy from the way PSY acts in the music video. However, PSY also “fit[s] into the Asian male stereotype of a jester, offering goofy laughs for all” (Cheah and Kim 8). The implication is that this “goofy” stereotype is what allowed him to grow “viral”. Asian stereotypes have long-held systematically racist connotations, which may have contributed to this viral growth. To watch a “goofy Asian man” dance to what is dubbed the “horse dance” may cement this negative stereotype in the minds of people worldwide. This image then takes precedence over his talent and hard work. However, it is still true that many people find entertainment in how bizarre and fun the music video is. Even if a global audience watched the “Gangnam Style” music video for laughs to be “cultured” and “stay with the trend”, this song still broke down barriers across the world, both musically and culturally. This project will explore the multiple factors of how Korean culture is spread through the global success of K-pop music.

The success of K-pop as a shared culture will be analyzed using globalization as a frame. The first section will discuss how social media contributes to the global growth of the Korean Wave. The next section will emphasize the importance of fandom and what global fans offer regarding globalization. The “Importance of Language Surrounding K-pop” section highlights how language is used as a strategy to accumulate international fans and appeal to many cultures, while also explaining how using the Korean language is an example of national and cultural pride. “Regional Appeal of K-pop, Inside and Outside Korea” describes the global business strategies of the industry, including promoting the same album in different countries, recruiting global talents, and releasing collaborations with global artists. The last section will use the Korean boy group, BTS, as the most successful example of globalization and will highlight how the contributions of BTS expand the global K-pop scene. Globalization of K-pop has evolved, resulting in Korean culture being shared beyond the borders of South Korea as a hybrid form of culture

that allows for the integration of other cultures in order to make a larger global impact.

THE EVOLUTION OF THE KOREAN WAVE

The Korean Wave has exponentially grown due to social media, its ease of access, and its global reach. Hallyu, also known as the “Korean Wave,” “[symbolizes] the rapid growth of the Korean cultural industries and their exports of popular culture, [that] started in 1997”, focusing on “the initial stage of the Korean Wave [that] was mainly received in Asia” (Jin 405). By exporting popular Korean culture to the rest of the world, globalization is achieved. Globalization is described as:

the process of creating networks of connections among actors at intra- or multi-continental distances, mediated through a variety of flows including people, information and ideas, capital, and goods. Globalization is a process that erodes national boundaries, integrates national economies, cultures, technologies and governance, and produces complex relations of mutual interdependence. (Dreher qtd. in Gygli 546)

The original Korean Wave represented the beginning of the globalization of Korean culture, mainly contained within Asia as Eastern cultures share many similarities. However, as time passed, a new Korean Wave emerged as social media became more prominent. This “refers to the circulation via social media of Korean popular culture—including television programs, films, K-pop, digital games, and animation—that began in 2008” (Jin 405). This new Korean Wave “mainly relies on the rapid growth of social media, because global fans—not only Asian fans but Western fans in Europe and North America—are able to enjoy Korean popular culture, again, via social media” (Jin 405). The emphasis on global fans (rather than only Asian fans) shows the growth of Korean culture. This new Korean Wave is possible because of social media. “Korean popular content has expanded its base beyond Asia to Europe, Latin America, and North America by taking advantage of social media and mobile devices” (Jung and Li 4). The original Korean Wave was restricted to mainly Asian countries; however, social media has allowed for a new Korean Wave to arise. By taking advantage of social media, Korean content has surpassed the limits of geographical location and become culturally relevant in other countries.

K-pop, specifically, has had the most success in going global, being one of the main factors that pushed Korean culture into an international setting. The phenomenon of “Gangnam Style,” the growth of K-pop groups and their global fandoms, and the increase in the global reach of the K-pop industry have all been a result of social media encouraging and spreading Korean culture. By comparing early Hallyu to the new Korean Wave, Jin emphasizes that cultural impurity, the “unexpected mixing and mingling of cultural materials” (Jenkins qtd. in Jin 412), allows Korean culture to appeal to a multitude of audiences on a global level. As opposed to early Hallyu, which appealed to mostly Asian audiences due to the “purity” of cultural content, new Hallyu incorporates local cultures as well. Hallyu being catered toward non-Asian audiences allows for the growth of the culture. The impurity of “mixing global and local culture” is similar to the concept of glocalization, where “local inputs blur global influences and vice versa” (Oh 21). In other words, glocalization is the diversification of native and foreign cultures. These ideas of glocalization and cultural impurity can be seen in the global consumption of Korean culture pertaining to K-pop. Because K-pop is made more accessible to a wider audience, social media allows for the thriving of global fandom culture and becomes a protagonist in how K-pop is globalized, shared, and consumed. The “transnational, border-crossing nature of the Internet” (Oh 22) allows for social media to “erode” the same national boundaries as K-pop since it is what drives the increase of globalization. Social media allows K-pop and fandoms to create networks of connections and form communities even if individuals are halfway across the world. Both cultural impurity and glocalization allow Korean popular culture to thrive outside of South Korea due to local influences that mold Hallyu into content that local fans enjoy and are willing to consume, while still holding on to parts of traditional Korean culture.

FANDOM CONTRIBUTIONS TO GLOBALIZATION

International fandoms and fan participation, which are built through social media, are necessary in order for K-pop to be globalized. The rapid globalization of K-pop grew due to the new Korean Wave which relied fandom to spread. The term fandom used to “[contain] negative images such as enthusiasts and fanatics who were too immersed in a specific target” (Lee). However, as fandom becomes normalized through the shared use of social media, the concept has taken on more positive

connotations, beneficial both to the fans and the cross-cultural spread of the music. Without fan translations that help non-Korean audiences understand K-pop lyrics, the global market expansion of K-pop would not have increased as quickly. Fans who participate in K-pop fandom can do so easily because of “the hybrid nature of K-pop” (Yoon 380), and K-pop became successful due to “loyal [fandoms] who already [enjoy] K-pop and [are] familiar with K-pop aesthetics” (Kim 50). Fandoms contribute to cultural hybridity through social media platforms, where communication is easy and very possible. Even fans in Copenhagen “localize K-pop dance,” (Oh 29) by dancing their own interpretations of K-pop choreography and sharing them on Youtube. For these fans, participating in fandom activities brings confidence and camaraderie. Fandoms form local communities to enjoy K-pop, and expose non-fans to K-pop. This is a type of glocalization where “users [or fans] who contribute to the culture” through “different types of public attention and engagement” (Xu) find community in fandom. The engagement that K-pop offers varies depending on what the fans choose to make of it, such as making and sharing their lyric videos, edits, dance covers, and more, allowing for K-pop to reach further audiences. The social aspect within fandom culture transcends the simplicity of being “just a fan” because it incorporates various cultures and identities. The emphasis on “global K-pop fans” is what drives the globalization of K-pop. These loyal fans prove that K-pop is worth paying attention to. The “world of K-pop” (Yoon 380) is its own entity, and the global introduction of K-pop is primarily due to the efforts of fandoms through fan participation and fan activity. Without the support from fans sharing content on social media and participating in fandom, K-pop and Korean culture would not have been able to reach so many people on a global level.

THE IMPORTANCE OF LANGUAGE SURROUNDING K-POP

K-pop uses English to connect to their global fan bases and attract non-fans because of its familiarity. In an English-dominated music industry, it is difficult for non-English music to succeed in the West. As a global music genre, K-pop is known for its catchy, upbeat songs that have key English phrases. One might think that using English devalues Korean culture, however, that is not true. According to Kramsh, “there is no one-to-one relationship between anyone’s language and his or her

cultural identity” (42). If this statement is applied to the genre of K-pop, it can be concluded that K-pop does not always use the Korean language to represent their music and culture. K-pop adapts by using English and “Engrish” (Yoon) to find success through “cultural impurity” (Jin). However, there is a difference in the way English and “Engrish” are used. The use of “Engrish” is meant to be more light-hearted, and may not always make sense. Take for example, “Gangnam Style,” which uses English phrases such as “sexy lady” mixed into the chorus. This use of “Engrish” is used to add a “unique playful characteristic” (Yoon 379) to the music. The use of English in K-pop has evolved from the playful “Engrish” used as a fun surprise, to K-pop songs using English more tactfully. Mixing English into songs is an effective way to share K-pop music due to its wide global usage and its familiarity compared to the Korean language. This introduces the idea of frequently using English as a way to “[lower] cultural and linguistic barriers” (Yoon 378). On a global scale, a fan is more likely to sing along to a song if it has more English lyrics or phrases than if it was entirely in Korean. It has become “common for K-pop artists to release multi-lingual content” (Doré and Pugsley) to reach a larger audience. This can be seen when K-pop groups title their songs with English phrases or fill the chorus with English, hoping that a song will grow in popularity on a global level. An example of this technique can be seen with the popular international girl group TWICE, with main tracks such as “Dance the Night Away,” “What is Love,” “Feel Special,” and more. These songs are not only officially titled in English, but the chorus is mainly sung in English too. “The mixture of English and Korean in K-pop has been pointed out as one of the characteristic features of hybridized K-pop” (Kim 65). This hybridization makes it easy for non-Koreans to sing along and build interest in the music genre. This strategy, therefore, increases the globalization and exposure of Korean culture. Using English is an effective way to appeal to multiple cultures outside of Korea and allow for the sharing of Korean culture to transcend national boundaries.

K-pop caters language to different global audiences to increase global exposure and reach. K-pop does not solely mix English into their music as a way to attract an international audience. They will produce entire albums in different languages, with no Korean at all. Again, this may bring up the argument that when these Korean artists do not use their language in their music, it loses its “Koreanness.” When language is not used, it “is often perceived by its speakers as a rejection of their social group and their culture” (Kramsch 7). However, for the K-pop market,

this is a business strategy to appeal to different countries. It is strategically more profitable for companies if their artists are able to promote their music successfully in multiple countries. In this process of promoting in foreign countries, the K-pop artists do not lose their identity as a K-pop artist. They still are representatives of K-pop music and Korean culture. Although language and identity are interconnected, K-pop is still a representation of Korean culture regardless of the language the music is sung in. The K-pop artists who are singing the music in a different language are making the effort to combine Korean culture and the culture of the language they are singing in for their fans. “K-pop’s unique characteristics are the result of the combination of local and global public tastes and efforts of Korean labels aimed at the audience” (Kim 73), which connects back to glocalization. The main focus of these types of globalization strategies is the audience and the fans. Language is a form of communication and appreciation for a culture. If a K-pop artist is touring in a foreign country, the fans (and even non-fans) would be able to connect to their artist better and have a more enjoyable shared experience, as they immerse themselves in the culture of K-pop. When these K-pop artists sing a song entirely in Japanese, Chinese, or English, they can better connect to an audience through language, like the groups BoA, EXO, and Monsta X. The K-pop industry’s “use of English contributes towards the fashioning of an identity that draws from various global influences, even as Korean remains their primary language of communication” (Lauren 3). The act of singing in another language does not devalue the K-pop artists as Koreans, instead it is the strategy of globalization that is integrated into the K-pop industry as part of the new Korean Wave.

The use of Korean in K-pop songs promotes Korean culture when shared with non-Koreans, due to exposing them to the Korean language alongside English (or non-Korean) phrases. According to Claire Kramsch in her book *Language and Culture*, the identity of a cultural community is both expressed and created through a shared language. By using Korean lyrics (representative of Korean culture) side-by-side with English lyrics (to reach out to a larger audience), K-pop promotes Korean culture and the language to non-Koreans. By “[drawing] strength and pride” (Kramsch 37) from being a member of the Korean community, K-pop artists promote their culture. Korean culture is preserved, and through K-pop, it is also shared with others outside of the community. With “K-pop [as] a result of the South Korean music industry’s vigorous efforts to emulate Western music” (Shin qtd. in Yoon 374), the combination of

K-pop culture and Western culture shows how globalization is successful due to the cultural hybridity of the Korean language integrated with English phrases. However, K-pop artists still hold pride in their identity and culture. This pride can be reflected in how K-pop stays with its culture and keeps its music as “K-pop” by using the Korean language. By mixing other languages in their music, this becomes a form of cultural hybridity, not cultural rejection. Using English or other languages to branch out to various countries does not equal the rejection of Korean culture. The Korean language is integral in the genre of Korean popular music and the identities of K-pop artists. By integrating Korean into the music, the industry exposes its global audience to the Korean language and, in turn, Korean culture. With South Korea being a small country, K-pop becomes something that is prideful since it is spreading Korean culture outside of their borders on a global scale.

REGIONAL APPEAL OF K-POP, INSIDE AND OUTSIDE KOREA

Aside from K-pop representing Korean culture, it is also a way of gathering a global audience with global consumers from a business perspective. K-pop idols and companies have succeeded in spreading the Korean Wave through the creation of sub-units. First used by one of the “Big 3” entertainment companies of the K-pop industry, SM Entertainment, sub-units were used as a marketing strategy to garner more fans in various countries. SM Entertainment’s CEO Lee Soo Man coined the term “cultural technology” to justify the impact of the company’s system of sub-units. Cultural technology describes “K-pop’s unique manufacturing know-how” (Kim 33), which explores one of the business models of how K-pop is globalized. “K-pop has become a hybrid commodity that smoothly flows across national or regional borders” (Lie qtd. in Yoon 378). This is possible due to cultural technology and the hybridity of K-pop. With K-pop becoming a “commodity”, it becomes globally consumed and integrated into other cultures. Aspects of the “manufacturing” of cultural technology include paying “special attention to the training systems and management of K-pop idol agencies that... nurture artists” (Kim 34). The idea of cultural technology is prevalent in the strategic process of building a K-pop group or K-pop idol since the K-pop industry has a unique system that consists of years of training and strict management from their companies. Using the twelve-member group EXO as an

example, the idea of “sub-units” and their effectiveness can be explained. With six members also being part of EXO-M and the other six being part of EXO-K, the group can promote their music in different countries (China and Korea, respectively) and bring more revenue to the company. However, they also promote, release, and perform their music as EXO, the combined group of twelve. This is important because it shows that the concept of sub-units is a marketing strategy and a business model to reach more countries and make more money. EXO was split up into sub-units and “manufactured” with the help of SM Entertainment’s resources and cultural technology, and used to expand outside of South Korea to larger audiences. By appealing to both local and foreign audiences, this can imply that the business strategy of some K-pop companies is to make twice the amount of profit by catering and glocalizing their K-pop groups to another country.

The globalization of K-pop becomes more successful when K-pop idols are from various countries, as they can offer more in terms of cultural and linguistic knowledge. K-pop is integrating other cultures into their traditional South Korean culture for global exposure and success. K-pop has been globalized due to entertainment companies recruiting their idols from around the world in an effort to “[penetrate] the global market.” (Yoon 378). This is an example of cultural hybridity where other cultures and people of different backgrounds influence the culture that is being shared, which is Korean culture through K-pop. With language “[symbolizing]... social identity” (Kramsch 7), K-pop uses hybridity to fuse their traditional Korean culture with other global cultures to go “beyond a national or an institutional boundary or category” (Kim 12). In this case, it can be implied that “multinational talents, including Korean American performers, and American/European producers and composers” (Yoon 378) are looked at more favorably than South Korean idols. Some examples of global talents would be Blackpink’s Lisa (Thai), NCT’s Mark Lee (Canadian), TWICE’s Momo (Japanese), and Stray Kid’s Felix (Australian). These idols have more to offer in terms of being “more global,” coming from different cultural backgrounds and usually speaking more than one language. There is value to having a foreign member or producer involved in the process for entertainment companies since it may bring more global exposure. However, the K-pop industry recruiting global talents doesn’t diminish K-pop as a representation of Korean culture; many of these global idols become immersed in Korean culture and exemplify cultural hybridity. There is a two-way street to recruiting

global talents, which is: (1) exposing non-Korean audiences to K-pop using the global members to communicate with fans, and (2) allowing the idols to represent their own cultural identities and backgrounds as a form of cultural hybridity. This allows K-pop to reach target audiences who identify with global idols and possibly find interest in Korean culture through a specific global member of a K-pop group. The genre of K-pop has surpassed the small country of South Korea and has expanded due to an increase in global talents who can offer something different in regards to culture and language.

International collaborations help increase the globalization of K-pop by reaching a larger audience. Collaborations between artists are very common since it allows for an intermingling of their fanbases, which draws attention from one artist's fanbase to the other's content. As K-pop has become more mainstream, global artists will collaborate with K-pop groups who have a decent following. This is a win-win for both artists as each artist will get exposure and support from the other artist's fandom and resources. The collaborations are also beneficial to fans and artists as it "involves imagination, through which particular cultural meanings are generated and negotiated" (Yoon 378). This means that cultural hybridity and glocalization occur based on fan interpretations and engagement. In the case of K-pop collaborations with Western artists, there is a "focus on the national perspective when measuring globalization" (Gygli 549) since these collaborations cross transnational borders. Some examples of recent K-pop and western collaborations are "Ice Cream" by Blackpink ft. Selena Gomez, "Beside U" by Monsta X ft. Pitbull, and "Shut Up & Dance" by NCT ft. Jason Derulo. The featured artists are all big names in the United States, which helped these K-pop groups get more exposure in the Western hemisphere. This unique and intercultural exchange allows for both artists to benefit from the collaboration and create a more significant global impact.

BTS AS A REFLECTION OF K-POP'S GLOBALIZATION

K-pop has found global success recently due to many factors such as social media, fandom, language, and regional appeal. The group that currently has the most global recognition is BTS (also known as Bangtan Boys or Beyond the Scene) due to their successful endeavors in the Western music market. The boy group of seven members represents K-pop

globally and exemplifies many of the previously mentioned strategies of globalization. They hold a solid social media presence, proven by their win of the “Billboard Award for Top Social Artist” (Parc and Kim) for the years 2017-2020. This particular Billboard award is fan-voted on social media, also showing that their fandom, ARMY, is active and supportive of BTS and their global endeavors. With BTS’s use of language, they often keep their music mainly in Korean (with English mixed in) as a way to take pride in their Korean identity. However, BTS has expanded their horizons with the release of a full English single, “Dynamite,” which “broke multiple Guinness World Records titles” (Suggitt). This full English track separates itself from “Engrish” or the occasional catchy English phrase in a K-pop song, as this song allows for non-fans to sing along without realizing that the song is considered K-pop, since it is being sung by Korean artists. This also helps the BTS ARMY fandom share their music as it becomes a way to introduce people to K-pop through a lens that they are more familiar with, as sometimes, non-fans will not give K-pop a chance due to the stereotypes they have for the genre. When non-fans listen to this upbeat and happy song without previous prejudices, they might change their mind about their perception of K-pop (previously set by PSY’s “Gangnam Style”). With BTS breaking records with their first all-English single, this proves that BTS has strongly contributed to the expansion of Korean culture, and they are on a different level of success compared to other K-pop groups. BTS was the number one best-selling artist of 2020 according to the IFPI, an “organisation that represents the recorded music industry worldwide” (ifpi.org), being the only Asian act in the Top 10. To put that into perspective, BTS sold more albums than artists such as Billie Eilish, Taylor Swift, Drake, Ariana Grande and others. This is an accomplishment for BTS and in-turn, the K-pop industry, considering that these big name artists are known globally and are well-known in the music industry. Since all of the members are Korean, BTS does not implement sub-units or have global recruits. However, BTS did popularize the use of collaborations when they released “Boy with Luv” ft. Halsey in 2017. The rest of the K-pop industry realized then that these collaborations could successfully globalize K-pop even further and followed in BTS’s footsteps. BTS also collaborated with other artists such as Nicki Minaj, Steve Aoki, Lauv, and Jason Derulo which increased their global presence as well. As a global representative of K-pop, BTS’s contributions and record-breaking achievements prove that K-pop has successfully shared its Korean culture with the world through music. BTS

has metaphorically “paved the way” for other K-pop artists to succeed on a global level. With the success of BTS, the “goofy Asian male” from “Gangnam Style” becomes a less prominent stereotype as BTS evolves into the new global standard representing K-pop.

With the various ways that the K-pop industry has globalized Korean culture and music, the evolution of the globalization of K-pop implies that the international success of K-pop is a combination of many factors. There is no single factor that contributes to the global success that the K-pop industry has currently reached. It is due to a combination of efforts from fandoms, the outreach of social media, the clever use of language, adapting to the culture of a foreign country, collaborating with those who hold success on an international level, and the tiring amount of hard work and passion that these idols pour into their jobs. By using K-pop to represent Korean culture on a worldwide scale, hybridity occurs and the people who consume K-pop and its commodities are able to enjoy Korean culture in a different way and create a new shared culture through the genre of K-pop.

WORKS CITED

- Allocca, Kevin. “A Year since Gangnam Style, K-Pop Keeps Getting Bigger.” *YouTube Trends*, Youtube, 15 July 2013, youtube-trends.blogspot.com/2013/07/a-year-since-gangnam-style-k-pop-keeps.html.
- “BTS Announced as the Winners of 2020’s IFPI Global Recording Artist of the Year Award.” *IFPI*, 10 Mar. 2021, www.ifpi.org/bts-announced-as-the-winners-of-2020s-ifpi-global-recording-artist-of-the-year-award/.
- Doré, Philippa, and Peter C. Pugsley. “Genre Conventions in K-Pop: BTS’s ‘Dope’ Music Video.” *Continuum* (Mount Lawley, W.A.), vol. 33, no. 5, Routledge, 2019, pp. 580–89, doi:10.1080/10304312.2019.1644293.
- Gruger, William. “PSY’s ‘Gangnam Style’ Hits 1 Billion Views on YouTube.” *Billboard*, 18 Jan. 2013, www.billboard.com/articles/columns/k-town/1481275/psys-gangnam-style-hits-1-billion-views-on-youtube.
- Gygli, Savina, et al. “The KOF Globalisation Index – Revisited.” *Review of International Organizations*, vol. 14, no. 3, Springer US, 2019, pp. 543–74, doi:10.1007/s11558-019-09344-2.
- Jin, Dal Yong. “An Analysis of the Korean Wave as Transnational Popular Culture: North American Youth Engage Through Social Media as TV Becomes Obsolete.” *International journal of communication* [Online], 2018, p. 404+. Gale Literature Resource Center, link.gale.com/apps/doc/A534025957/LitRC?u=new67449&sid=LitRC&xid=d7a3ebb4 Accessed 26 Feb. 2021.
- Jung, SooKeung, and Hongmei Li. “Global production, circulation, and consumption of Gangnam Style.” (2014). https://scholarworks.gsu.edu/cgi/viewcontent.cgi?article=1028&context=communication_facpub

- Kang, Aa-young. "BTS Becomes the Youngest to Receive Order of Cultural Merit." *Korea Times*, 9 Oct. 2018, www.koreatimes.co.kr/www/art/2020/08/398_256678.html.
- Kim, Young D. *The Pursuit of Modernity: The Evolution of Korean Popular Music in the Age of Globalization*, University of Washington, Ann Arbor, 2020. ProQuest, <https://login.proxy.libraries.rutgers.edu/login?url=?url=https://www-proquest-com.proxy.libraries.rutgers.edu/dissertations-theses/pursuit-modernity-evolution-korean-popular-music/docview/2437214844/se-2?accountid=13626>.
- Kramersch, Claire. *Language and Culture*. Oxford University Press, 1998.
- "Laughing at Psy." *Theological Reflections on "Gangnam Style": A Racial, Sexual, and Cultural Critique*, by Joseph Cheah and Grace Ji-Sun Kim, Palgrave Macmillan, 2014, pp. 8–34.
- Lauren, Yeo R. *The Commodification of English in K-Pop: Globalisation and Multiple Markets*, National University of Singapore (Singapore), Ann Arbor, 2018. ProQuest, <https://login.proxy.libraries.rutgers.edu/login?url=?url=https://www-proquest-com.proxy.libraries.rutgers.edu/dissertations-theses/commodification-english-k-pop-globalisation/docview/2190671023/se-2?accountid=13626>.
- Lee, Young-ji, et al. "Analysis of the characteristics of K-POP fandom records for popular music archives, and plans to use them, focusing on the BTS fandom 'Army.'" Archives Research, no. 60, Korean Archives Society, Apr. 2019, pp. 161-194, doi:10.20923/KJAS.2019.60.161.
- Oh, Chyun. "From Seoul to Copenhagen: Migrating K-Pop Cover Dance and Performing Diasporic Youth in Social Media." *Dance Research Journal*, vol. 52 no. 1, 2020, p. 20-32. Project MUSE muse.jhu.edu/article/755941.
- Parc, Jimmyn, and Shin Dong Kim. "The Digital Transformation of the Korean Music Industry and the Global Emergence of K-Pop." *Sustainability* 12.18 (2020): 7790. Crossref. Web. <https://www.mdpi.com/2071-1050/12/18/7790/html>
- Suggitt, Connie. "BTS Smash Two More World Records with Single 'Dynamite.'" *Guinness World Records*, Guinness World Records, 16 Apr. 2021, www.guinnessworldrecords.com/news/2021/4/bts-smash-two-more-world-records-with-single-dynamite-655802#:~:text=Not%20only%20did%20the%20song,by%20a%20K%2Dpop%20group.
- Xu, Weiai Wayne, et al. "Longitudinal Dynamics of the Cultural Diffusion of Kpop on YouTube." *Quality & Quantity*, vol. 51, no. 4, SPRINGER, 2017, pp. 1859–75, doi:10.1007/s11135-016-0371-9.
- Yoon, Kyong. "Global Imagination of K-Pop: Pop Music Fans' Lived Experiences of Cultural Hybridity." *Popular Music & Society*, vol. 41, no. 4, Oct. 2018, pp. 373–389. EBSCOhost, doi:10.1080/03007766.2017.1292819.

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The Leaky Pipeline Menacing Women's Success: Dissecting Gender Biases in the Healthcare Profession

ABSTRACT

As a thriving field, healthcare has become more accepting of women than it had previously been. However, this degree of inclusivity has not yet reached a level of equality. This paper explores the “leaky pipeline” analogy to explain why and how women are discouraged from pursuing medicine. The pipeline parallels an individual’s path towards becoming a successful physician, including academia and the workplace, while the leaks parallel societal factors forcing women out of the profession. This paper has three sections that will cohesively explain how gender norms induce the leaks. First, the leaky pipeline’s sticky floor illustrates how gender stereotypes “glue” women via a figurative adhesive characterized by an unwelcoming and discouraging environment in early STEM classrooms. Coupled with classroom prejudice, biased media and marketing further reinforce stereotypes. Next, the second section acts as a bridge between the first and third sections by elaborating on how early stereotypes instigate the gatekeeping nature of medicine, which then establishes the concept of the glass ceiling. The glass ceiling is a visual representation of the limits placed on women’s success. Specifically, this section explores the factors that can hinder women’s advancement in the medical field, namely prejudiced work atmospheres and the imposter syndrome. The paper settles on the conclusion that pipeline reconstruction, or elimination, is necessary to prevent leakage. The medical journey is unique to every individual, a quality that cannot be fostered through the pipelines’ inherent restrictive and systemic nature.

INTRODUCTION

Statistically, there is an inherent gender gap circulated across all stages of academia: preschool and elementary school, high school, college, and even post-graduate training. This inherent gender gap becomes more defined when specifically examining STEM (science, technology,

engineering, and mathematics) professions, such as medicine and health-care, where women are significantly underrepresented in leadership roles. These gender disparities originate from traditional social and gender norms ingrained in people as soon as they learn to comprehend their environments. A common example is young children being programmed to believe that girls play with dolls while boys play with more engineering/building-oriented toys, like Lego™. With time, these stereotypes self-polinate themselves and can slow social progress in society.

Many women in the United States are often not encouraged or even outrightly *discouraged* from participating in STEM-related fields, despite showing great interest in them. Disproportional pay and representation allow for the quantification of gender disparity in medicine. For example, 35% of current physicians are female yet may stand to earn up to 40% less pay than male doctors (Motta-Moss & Hussain, 2020, pp. 1-2).

Since Dr. Elizabeth Blackwell, the first woman physician in the United States, earned her degree from Geneva Medical College in 1849, many more women have followed in her footsteps to fulfill their passions (Dr. Elizabeth Blackwell, 2003). Although Dr. Elizabeth Blackwell created the blueprint for female physicians and defied gender roles, more work can be done to achieve equity. As a field of giving, healthcare needs to be more welcoming to all the women who aspire to accomplish their dreams. After all, greater diversity on the universal medical team expands perspectives, nurturing more remarkable medical discoveries and solutions.

Gender inequity in medicine extends beyond unequal pay, as illustrated by the leaky pipeline metaphor. For women, the path to attaining their medical degrees is leaky,-- societal factors facilitate or spur many women to drop out, in spite of any strong passion they may have for science and medicine. This remark is not to say that the pipeline to a career in medicine is fool-proof and leak-free for men. They might experience struggles as well; however, those struggles are not because of the society-imposed gender norms. The main difference is that for women, the opposing factors are misogyny and patriarchy. This difference leads to the research question: *how do gender norms create the leaky pipeline for women pursuing medicine?*

In this way, this paper will extend the theory of the leaky pipeline by contextualizing what occurs inside the pipeline itself. The first section, “The Sticky Floor: Adhesives Preventing Women’s Entry in Medicine,” applies the sticky floor theory to explore how exposure to gender stereotypes in childhood and the leaky pipeline’s manifestation in academia

provoke premature leaks. In the second section, “Healthcare: A Gate-keeping Profession?,” the critical mass theory demonstrates the leaky pipeline’s unyielding, cyclical nature. The last section, “The Glass Ceiling: Physical Barriers Putting a Limit on Women’s Success,” applies the glass ceiling, through the chilly climate and imposter syndrome, to unmask the inequality women face in the workplace, which hinders their ability to advance in the field. Principles from sociological and psychological perspectives will dissect the research question by evaluating gender norms’ impact on societal expectations, social influences, identity formation, motivation, interests, and self-confidence.

Ultimately, this research argues that gender norms breed the leaky pipeline for women pursuing medicine by continuously reinforcing gender roles across all stages of the physician career path. Gender norms are ingrained within the inherent patriarchal society and are, as such, reflected in such a male-dominated field. The leaky pipeline and its agents (the sticky floor and glass ceiling) gatekeep the healthcare field from women by creating unwelcoming environments, leading to gender inequity in entering *and* continuing the profession.

THE STICKY FLOOR: ADHESIVES PREVENTING WOMEN’S ENTRY IN MEDICINE

From the external perspective, the leaky pipeline by itself acknowledges that leaks do, in fact, occur. Contrarily, the sticky floor and glass ceiling provide an internal perspective, revealing the events that occur inside, instigating the pipeline to leak. This particular section examines the leaky pipeline’s sticky floor, revealing that premature (and of course metaphorical) leaks start in youth, long before any formal commencement of the medical journey. This section will apply the leaky pipeline theory to biased media, marketing, and classroom environments to examine how the strong adhesive in the sticky floor impedes young women from even considering the medical profession.

I. THE CULPRITS OF CONSERVING GENDER ROLES: MEDIA AND MARKETING

The sticky floor cultivates biased societal exposure that creates pressure on the pipeline, inducing leaks. One instance of such biased exposure is marketing with sexist undertones. In consumer media, indirect allusions to perceived inferiority target young girls and their dreams: “... Implicit suggestions on male superiority...engrain the idea that men and boys are superior in leadership... This is perfectly illustrated by the re-

cently withdrawn girls shoe line by Clarks called “Dolly Babe,” for which the equivalent version for boys ... was called ‘Leader’” (Bots et al., 2018, p. 4). The difference in rhetoric between the two shoe lines creates gender disparity through misogyny. Labeling young girls as “Dolly Babes” while boys are “Leaders” unfairly devalues young girls by insinuating that they are not courageous or strong, when there is no such empirical method to measure courage or strength. Such marketing erroneously maps out who is capable of exhibiting leadership through the medical profession and leaks out girls from the pipeline even before they think to start pursuing a professional career. Young children’s minds are readily malleable, and such difference in rhetoric suggests to girls that they are not tailored for the medical profession. Furthermore, objectification of women in marketing leads to desensitization and normalization in society; early exposure to stereotypes may reflect in the workforce, as social norms drill these stereotypes into everyday culture.

Additionally, various forms of mass media, such as television shows, are also culprits of producing biased content that reinforce gender stereotypes. For instance, Doctor Who, a British television program, follows a lead doctor’s journey in protecting the world with his companions. Although the Doctor has traditionally been a man, in July 2017, the creators announced that the 13th incarnation would be a woman. Although representation had been achieved, it came at the expense of continued unconscious biases: “The ensemble of friends implicitly suggests that the female Doctor is unable to save the day on her own. Respondents [of the interview with feminist fans of Doctor Who] also questioned why the female Doctor had to be the “nice” one out of the entire cadre of Doctors” (Yodovich, 2020, p. 1253). Originally, the male doctors were shadowed by female “companions” who had a decidedly lesser contribution to the plot of saving people compared to male ones. However, with the implementation of a female doctor, she was suddenly accompanied by “friends” ‘ who helped her role as a hero. This difference deepens the societal pitfall that women are weak and dependent on others. Similar to the marketing scenario described above, this allusion creates premature leaks in the medical pipeline, yet again, as young girls start losing confidence in their ability to become physicians. Also, the rhetoric change from “companions” ‘ to “friends” stigmatizes women’s character. A common stereotype of women is that they are always expected to be kind and friendly, while men are expected to be strong and independent. While kindness and compassion are necessary for the healthcare field, they should not necessarily be limit-

ed to femininity because it raises false stereotypes. The message that one's gender does not make them incapable of having compassion or being a leader will eliminate such stereotypes in the media and prevent the sticky floor from creating premature leaks, in turn bringing about gender equity. In all, media and marketing are notorious for maintaining false gender norms and nigh impossible societal expectations that discourage girls in the classroom.

II. TENSIONS ARISING IN THE CLASSROOM

Consequently, early exposure to biased media can more often than not perturb young girls in STEM classrooms, establishing emotional intimidation—yet another aspect of the sticky floor. Media exposure and marketing that flaunt outdated views feed false lies to young children, making it necessary to recognize the sociological impacts. For instance, in her TedTalk, then 16-year old Rebecca Baron recalls the role gender norms played in shaping her preliminary scientific endeavors. In kindergarten, she dissected a fish. During this time, boys and girls were fascinated alike, and teachers encouraged Rebecca to follow her dreams—initiating her love for biology. Four years later, however, when Rebecca repeated the same dissection experiment, she remembers not facing the same encouragement: “I remember standing next to a table surrounded by a large group of boys as I located the fish’s heart and suddenly I felt as if I didn’t belong. When I told adults and peers my aspirations in biology..., I received some disapproving shakes of heads, and my friend...told me directly that I should stop being a nerd” (TEDx Talks, 2016). Unlike back in kindergarten, Rebecca was now one of the few girls who demonstrated interest in the dissection, as indicated by the “large group of boys”. Young children’s minds are fragile and can easily adhere to unjustified gender norms portrayed by the media. Children are still mentally developing. Their perceptions of the world are still malleable, with the ability to be shaped by outside influences, such as the “Dolly Babe” Clark’s advertisement or “Doctor Who” scenario. As for Rebecca Baron, the boys expressed resistance to the idea of a girl completing the dissection, creating premature leaks in the pipeline. However, this resistance also has a sociological impact, potentially discouraging girls who were not affected initially by biased media exposure. Without a doubt, conventional wisdom has it that, *to a degree*, perceptions from friends and peers cast shadows on human interests and behavior.

Children in the classroom are no exception to this phenomenon. In fact, Raabe et al. observe, “The more friends someone has who prefers

a certain subject, the more likely the person is to also choose that subject as a favorite” (2019, p. 115). A yearning to be accepted unconsciously leads young girls to adapt to their environment, even when it may be to the detriment of their passions. In Rebecca’s case, she was the outlier; she had a positive attitude towards biology, whereas her friends did not. Although being different did not discourage Rebecca from loving science, other, more impressionable young girls may fall prey to the toxic culture of expected conformity, creating a viral chain that passes along from one young girl to another. This viral chain now also puts girls not initially impacted by the sexist media in danger of leaking out of the pipeline. As a result, positive social interactions between students can encourage young girls to pursue science, while negative interactions can do equivocal damage.

Additionally, on the sticky floor, media bias can translate into classroom bias, as well, where teachers unjustly leave young female students out of many essential conversations in the classroom. By revisiting Rebecca’s experiences, it is clear that adults, likely some teachers included, either disapprovingly “shook their head” in response to young Rebecca’s interest in biology, or did not oppose the disinterest her male counterparts showed during the dissection. Rebecca’s experience is universal. Correspondingly, in science and math classes in primary and secondary education, boys are given more attention and encouragement: “The continuing message appears to be that boys’ ideas and participation in class are more important than girls’. It seems likely then, that girls would eventually get the message and leave” (Clark Blickenstaff, 2005, p. 379). Again, leaks in the pipeline occur even before girls formally enter medicine, as they are overlooked in STEM classes. In today’s society, it is less likely that teachers will outwardly discriminate against young girls. Even though their intentions may not be discriminatory, an unconscious pattern of behaviors that favor boys in the classroom hint to young girls that they may not belong; they lose their developing interest in science early on. Similarly, these challenges extend to post-secondary education, as well. Particularly, in academic surgery, women face the “invisible treatment”: “A salient experiential narrative within this theme is one of invisibility—being overlooked, left out, or unrecognized” (Thompson-Burdine et al., 2019, p. 4). The incorrect mapping of who is “fit” to be a doctor leads to women’s achievements going unrecognized. A symptom of this being women struggling in their medical education and having a hard time approaching peers and professors for help, as they are ignored in the first

place. The theme of invisibility complements the sticky floor, expediting the effect of the leaky pipeline. Women start to face obstacles as early as the first step towards becoming a doctor- learning in the classroom. To conclude, disingenuous media representation and gender discrimination in classrooms lower the self-esteem of many young girls, making them more susceptible to losing interest in science-oriented professions.

HEALTHCARE: A GATEKEEPING PROFESSION?

The lack of female leadership in media and equal attention in classrooms translate into the evolution of gender roles into stereotypes in medicine, deterring young women from the field through leaks in the pipeline. Certain professions are stigmatized based on gender roles and the responsibilities of that job. For example, nurturing and caring jobs are labeled feminine, while jobs requiring scientific problem-solving skills are considered masculine, unfairly distributing jobs based on gender. Underrepresentation of women in medicine has further reinforced the false stigma regarding job distribution, as only “5% of people presume a doctor will be female, according to a recent survey of 4000 Britons conducted by LinkedIn. Among people over age 55, that figure fell to just 2%” (Vogel, 2019, p. 295). Since a smaller percentage of people over 55 years of age imagine women to be doctors, it would follow that such societal expectations of job distributions are highly outdated and conservative. Considering a more significant percentage of younger people, in general, imagine women to be doctors, it intimates that society is becoming more accepting of eliminating gender roles. However, it occurs at a staggeringly slow rate, based on the difference in percentages only being 3%. Bondage to societal expectations and the distributions of jobs to satisfy those societal expectations is to blame for this slow rate. As such, it can be observed societal expectations have a parasitic nature that fuels the faulty pipeline. Since people are exposed to them from a young age, it becomes difficult to detach from the “parasites.” Even though individuals can break free from such stereotypes, society as a whole needs to outrightly eliminate them in order to bring about true diversity.

However, suppose norms remain as they have. Said norms will then, like parasites, continue to feed off the vulnerable (in this case, women) to further perpetuate gender disparities in medicine. To adhere to these gender norms, women end up making overly-rigid sacrifices and choosing professions they may not have passion for: “...When a woman

goes against societal expectations of maternal duties, they receive stigma and criticism from society. This makes it difficult to break the vicious cycle and leads to women preferring jobs that enable a good work-life balance” (Bots et al., 2018, p. 2). Fearing criticism, women may choose jobs that do not necessarily align with their passions but rather social beliefs. The unfair tradeoff between pursuing one’s dreams and creating a “good” work-life balance, which unfairly assumes women have maternal duties, creating a never-ending “vicious cycle” where social norms complicate women’s entry into healthcare. Without doubt, doctors require copious amounts of time to tend to their academics and work. However, social norms expect women to tend to significant amounts of home responsibilities, such as maternal duties, as well. Therefore, gender roles make it difficult for women to be doctors as it requires taxing levels of time commitment, accompanied by home “obligations.”

Social demands perpetuate a toxic cycle of imposing stress on women, pushing them out of the pipeline. In turn, healthcare’s gatekeeping nature extends into the underrepresentation of women in medicine, further exasperating the cycle. The lack of women in healthcare raises a concern of insufficient mentors and role models exemplified by the “concept of a ‘critical mass’ below which there are not enough people of a particular type to maintain a viable population” (Clark Blickenstaff, 2005, p. 376). The number of women in healthcare is below the “critical mass” threshold, meaning that the medical field does not adequately represent women. The inability to meet the threshold deters young women from the medical field in the first place. They notice small numbers of people like them who become doctors, aggravating the cycle because underrepresentation leads to fewer women entering the medical profession, leading to underrepresentation, again. This endless cycle provokes endless leaks in the leaky pipeline.

Many believe that with a growing number of women pursuing medicine, lack of representation and critical mass are no longer relevant arguments. For example, they cite statistics that attempt to prove that near equality has been reached in medicine, such as “female physicians comprising 49% of the current medical student population in the United States” (Motta-Moss & Hussain, 2020, pp. 1-2). Nevertheless, while it is true that there are currently more women physicians than there were historically, equality may be close, but not equity, as statistics alone cannot measure impartiality. Not to mention, this counterargument refuses to recognize that future leaks, further down in the pipeline, are possible. The

critical mass theory still applies because even with increasing entry into the field, women are not given proportionally as many leadership opportunities. For example, a 2014 report by the Association of American Medical Colleges (AAMC) “found that by 2014...only 16% of medical school deans were women” (Rochon et al., 2016, p. 1053). Lack of critical mass in leadership reinforces gender roles and biases, further encouraging leaks in the pipeline because young women speculate that even if they *can* enter the medical field, it will be challenging to attain high levels of success. Even though society may be incrementally approaching equal numbers of men and women in academic medicine, from a young age, women are exposed to gender norms that are actively working *against* their aspirations, effectively hampering upward mobility. Therefore, together, societal expectations and minimal representation create a cycle that increases the leaky pipeline’s efficiency, as it prematurely leaks young women out of the pipeline. Healthcare’s gatekeeping nature reveals that underrepresentation exists not only for entry into the profession but also for entry into leadership roles. Now, it is essential to consider why there is minimal women leadership in medicine.

THE GLASS CEILING: PHYSICAL BARRIERS PUTTING A LIMIT ON WOMEN’S SUCCESS

Like the sticky floor, the leaky pipeline’s glass ceiling builds dimension, adding to the internal perspective. The glass ceiling is a metaphorical barrier that limits female doctors’ accomplishments in medicine, giving them quantifiably fewer opportunities to flourish than male doctors. This section exposes that healthcare as a field does not treat men and women equally with regard to accolades, putting women at an unfair disadvantage regarding the advancement of their medical careers. Specifically, the “chilly climate” and imposter syndrome cause women to leak out of the pipeline even after earning their medical degrees.

I. THE “CHILLY CLIMATE”

The glass ceiling portrays how gender roles place limits on women’s advancements. In a case study, 26 women aged 32 to 64 years and with 3 to 22 years of medical experience were telephone-interviewed to share their experiences. These women were currently or previously employed in the Michigan Medicine Department of Surgery, University of Michigan’s healthcare network. A significant number of women reported undesirable environments. Specifically, Participant 147 recalled blatantly

sexist situations, as “gender seemed to be an issue. It’s just the comments made by some males. But that’s just the way it is in surgery...” (Thompson-Burdine et al., 2019, p. 5). Women physicians encounter sexist ideologies, which are surprisingly normalized in professional settings. Often, sexism unfairly places women on a lower level of an outdated totem pole of respect due to beliefs of female inferiority based on perceived gender roles. Discrimination and prejudice lead to leaks in the pipeline because, like everyone else, women doctors desire (and as far as civilized society is concerned, *deserve*) to be treated with politeness. Therefore, women are not culpable when they decide to quit their jobs due to their coworkers treating them in uncordial and demeaning ways. Further, sexist ideologies may advance into sexual harassment, exaggerating the already uncomfortable environments for women: “While the climate for women can be merely cool if they do not feel welcomed by their male peers, at times the atmosphere becomes openly hostile in cases of sexual harassment” (Clark Blickenstaff, 2005, p. 381). The “chilly climate” metaphor illustrates the discomfort and isolation that female doctors experience in unwelcoming male-dominated environments. Nonetheless, in cases of sexual harassment, the temperatures drop even lower, signifying an amplified fear for security. These unpleasant environments jeopardize women doctors’ safety, threatening them to leak out of the pipeline. The existence of overt sexual harassment in professional settings alludes to the existence of an underlying societal problem that establishes toxic behaviors through the perpetuation of the glass ceiling.

To elaborate, the underlying societal problem that manifests through the perpetuation of the glass ceiling is the foundation of pre-existing power differentials. Sexual harassment arises because of perceived power imbalances that unfairly assign women lesser degrees of authority: “Sexual harassment is a manifestation of...invisible power structures. Overt sexual advances are just the tip of the iceberg, with gender harassment [...] ‘that convey[s] insulting, hostile, and degrading attitudes about women,’ being the most common and insidious form of sexual harassment” (Menon, 2020, p. 1302). Sexual harassment exists in many forms, with “overt sexual advances” being one of many situations. Other cases of sexual harassment include uncomfortable and derogatory remarks, despite apparent disinterest from the woman. The culprits’ feelings of superiority reveal their uncivilized desire to belittle their victims, stirring harassment. Menon herself has been a victim of harassment: “My clinical rotations were polluted with incidents that repeatedly reminded me of my

status as a woman in medicine: a patient asking me for my phone number over and over again in front of my resident” (2020, p. 1302). This case indicates that sexual advances are not limited to coworkers, but patients can be culprits, too. Despite Menon being clearly unappreciative of the patients’ demand for her phone number, the patient still continued to ask, implying that he considered himself exempt from standards of basic human decency. Harassment in the presence of her resident affected Menon’s perception of her status as a woman doctor, reminding her of power differentials informed by gender norms. Menon is one of many women who have experienced such difficulty in their medical careers. This discomfort has psychological implications, arising the compulsion to leave the healthcare field altogether: “...Women experiencing gender-based discrimination considered leaving a position (45%), declining a position (14%), or requesting reassignment (16%) because of it” (Lyons, 2021, p. 154). The statistics quantify, in empirical terms, the impact that gender discrimination and prejudice in the workplace have on women doctors’ desires to continue their jobs. Unsurprisingly, due to unsafe environments, significant percentages of women desire to leave their threatening situations, either through the termination of appointments or reassignment. Other women may opt to refuse job offers in fear of harassment. The glass ceiling hinders women doctors’ success by creating environments that discourage them from continuing their professions. Inhibition delays their advancement through the pipeline, triggering leaks as they might not see a purpose in continuing their careers if they feel unsafe in their environments.

II. SELF-DOUBT THROUGH IMPOSTER SYNDROME

Despite carrying significant weight in the medical profession and its advancements, women are not accordingly given credit. Although today, more women are becoming physicians, leadership is still lacking: “In 2017, women composed 46% of assistant professors, 37% of associate professors, and only 24% of professors. While these numbers vary by specialty, women are underrepresented at all levels of leadership in all specialties” (Lyons, 2021, p. 151). The “glass ceiling” within the leaky pipeline imposes structured and systemic limitations on women’s success. Women are denied leadership positions despite having the same (or in certain cases, greater) qualifications as their male colleagues, fortifying the stigma that women cannot be leaders. Such disparities spread into healthcare, creating leaks in the pipeline; as a result women realize fewer benefits and greater costs to pursue healthcare since attaining leadership

positions is extremely difficult. Moreover, the current healthcare system does not work in favor of gender equality, as it has the capacity to tamper with their self-esteem: “Over time, women may internalize feelings of professional inferiority... and grow to believe themselves under equipped for their job or academic studies. This is also known as the imposter syndrome (20)” (Bots et al., 2018, p. 4). With constant misogyny and denial of leadership positions, women may develop imposter syndrome and doubt their capabilities. Gender roles have created a stigma that women are not capable of handling tasks such as professional leadership, leading them to question healthcare as a career pursuit.

While discouragement prevents them from entering the medical pipeline, the heavy burden of doubt leaks out many women that have already entered it. Along with internalizing incompetence, they may also internalize anxiety and fear: “Those suffering from IS may lack self-awareness or... internalize these feelings [of anxiety and distress], leading to self-criticism and a reluctance to open discourse. Self-perception of being under qualified...leads to significant career setbacks and missed opportunities (Cader et al., 2021, pp. 347-348). People with imposter syndrome constantly criticize themselves, preventing them from engaging with others and pursuing new opportunities to advance their careers. Internalizing anxiety and distress exaggerate leaks in the pipeline since imposter syndrome may force women physicians to deal with adverse situations with little guidance. They struggle to keep up with the societal expectation to always “toughen up”, cultivating professional insecurities. Women doctors’ unease in consulting with others in times of stress leaves them on their own to find solutions, further enforcing imposter syndrome. Additionally, internalizing negative feelings hurts one’s self-confidence as one constantly compares themselves to colleagues, creating glass ceilings that cyclically discourage them from advancing in their careers. This leads to personal and emotional decisions being incorrectly attributed to solely women, as if there was never a systemic buffer that brought them to such decisions. However, in reality, external factors, like societal pressures and gender biases, manifest in women as deteriorating mental health, provoking emotional responses that lead to pipeline leaks.

On the other hand, it can be argued that imposter syndrome does not validate women’s struggles in advancing their careers because lack of self-esteem is not necessarily gender-specific. In other words, imposter syndrome is not limited to women: “Although first described in high-achieving women, IS also affects men” (Cader et al., 2021, p. 347).

However, such arguments fail to recognize the gender-gearred causes of imposter syndrome for women which also coexist with other negative factors, such as isolation. Physical isolation within a chilly work environment coupled with internal isolation from imposter syndrome again results in the pipeline leaking out workers. Furthermore, lack of self-esteem induces women to discredit themselves even after impressive accomplishments: “Many [women surgeons] attributed their appointments, advancements, and rewards to luck” (Thompson-Burdine et al., 2019, p. 6). Women doctors may accredit their success to luck rather than the abilities that earned them their positions and accomplishments to begin with. The absence of self-efficacy, trust in oneself, is due to small yet persistent gender norms surrounding women. Over time, these small sexist ideologies accumulate and impose an even heavier burden on women striving to succeed in medicine. Owing their success to external factors, women doctors separate their accomplishments from themselves, adding another layer of isolation. In this way, gender norms impose a psychological toll: “...Barriers blocking the route to [women’s] degrees... included feelings of isolation and intimidation” (Clark Blickenstaff, 2005, p. 380). Institutional policies and hostile treatment from colleagues embed gender biases in the healthcare profession, isolating women and putting their mental health at risk. The mental toll from feelings of inferiority makes healthcare an unattractive field for many women doctors despite completing medical school. Therefore, the glass ceiling pressurizes the leaky pipeline and inflicts emotional pain on its victims through external factors (discriminatory environments and systems) and internal factors (deteriorating mental health).

CONCLUSION: TIME TO RECONSTRUCT THE PIPELINE

This research paper explores the role of gender norms in preventing women from starting and advancing their medical careers by dissecting the leaky pipeline theory in three sections. First, the sticky floor shows how gender biases that are manifested in media representation impede young girls from kick-starting their passion for science. Second, due to gender biases that shape young girls’ self-confidence and thinking, healthcare has become a gatekeeping profession that excludes women—where this sentiment fuels discrimination in the workplace as the glass ceiling imposes struggles towards obtaining leadership in the medical

field. Altogether, these aspects exert pressure on the leaky pipeline, compelling women to exit the profession.

Possibilities for further research include quantifying at what point in time leaks in the pipeline occur the most. Even though this paper identifies where leaks occur in the pipeline, finding where the leaks are the most prevalent will facilitate faster response time with regard to resolving said issue. In addition, to better understand gender biases in the health-care profession, areas beyond the United States (and similarly developed countries) need to be considered. The operation of the leaky pipeline may diverge for women with different cultural or racial backgrounds. Addressing the leaky pipeline in various contexts ensures a worldwide effort to tackle gender disparity across the healthcare field.

Also, while this paper examines the gender-based distribution of jobs in healthcare as a whole, future papers may look into the gender-based distribution of jobs within specific healthcare specialties. On a similar note, examining the job distribution between doctors and nurses will reveal why most nurse practitioners—88% as of 2020—are women (U.S. Bureau of Labor Statistics, 2021). Investigating the power dynamic between doctors and nurses will sharpen sociological understanding of the role of gender norms in healthcare.

Nevertheless, this paper identifies the root of the problem. Gender biases disguise themselves as mere obstacles within the medical journey, making the journey unnecessarily more difficult for women. Impartiality can only be reached when society fosters diversity and rejects gender stereotypes. Therefore, future research may look into ways society can break gender biases by disassembling components of the leaky pipeline, such as the sticky floor and glass ceiling. Reconstructing a pipeline without leaks will no longer restrict women from entering healthcare. Possibly, however, the solution lies in redefining the academic journey so that the pipeline no longer illustrates it at all. Since “pipeline” has a mechanical connotation, redesigning the system to have more humanistic elements will make it more welcoming for everyone. After all, women can be leaders, too, and are deserving of equal opportunity to contribute to medical prosperity.

REFERENCES

- Bots, S. H., Zuidgeest, M. G. P., Gohar, A., Eikendal, A. L. M., Petrelli, A., van Os-Meden-
dorp, H., van der Schaaf, M., F., van Sorge, N., M., van Wijk, M., Middendorp,
S., Speksnijder, C. M., Klipstein-Grobusch, K., Seyfert-Margolis, V., Mollema,
E., van Wijk, F., & den Ruijter, H., M. (2018). Women in translational medicine:
Tools to break the glass ceiling. *Frontiers in Medicine; Front Med (Lausanne)*, 5,
330. <https://doi.org/10.3389/fmed.2018.00330>
- Cader, F. A., Gupta, A., Han, J. K., Ibrahim, N. E., Lundberg, G. P., Mohamed, A., & Singh,
T. (2021). How feeling like an imposter can impede your success. *JACC: Case
Reports*, 3(2), 347-349. <https://doi.org/10.1016/j.jaccas.2021.01.003>
- Clark Blickenstaff, J. (2005). Women and science careers: Leaky pipeline or
gender filter? *Gender and Education*, 17(4), 369-386. <https://doi.org/10.1080/09540250500145072>
- Dr. Elizabeth Blackwell. (2003). *National Library of Medicine*. https://cfmedicine.nlm.nih.gov/physicians/biography_35.html
- Lyons, N. B., Bernardi, K., Olavarria, O. A., Shah, P., Dhanani, N., Loor, M., Holihan, J. L.,
& Liang, M. K. (2021). Gender disparity among American medicine and surgery
physicians: A systematic review. *The American Journal of the Medical Sciences;
Am J Med Sci*, 361(2), 151-168. <https://doi.org/10.1016/j.amjms.2020.10.017>
- Menon, A. (2020). Sexism and sexual harassment in medicine: Unraveling the web. *Jour-
nal of General Internal Medicine : JGIM; J Gen Intern Med*, 35(4), 1302-1303.
<https://doi.org/10.1007/s11606-019-05589-0>
- Motta-Moss, A., & Hussain, Z. (2020). Inequities faced by female doctors serving
communities of need. *Journal of Medical Education and Curricular De-
velopment; J Med Educ Curric Dev*, 7, 2382120520915895. <https://doi.org/10.1177/2382120520915895>
- Raabe, I. J., Boda, Z., & Stadtfeld, C. (2019). The social pipeline: How friend influence and
peer exposure widen the STEM gender gap. *Sociology of Education*, 92(2), 105-
123. <https://doi.org/10.1177/0038040718824095>
- Rochon, P. A., Davidoff, F., & Levinson, W. (2016). Women in academic medicine leader-
ship: Has anything changed in 25 years? *Academic Medicine; Acad Med*, 91(8),
1053-1056. <https://doi.org/10.1097/ACM.0000000000001281>
- TEDx Talks. (2016, Jun. 13). *Conquering the Gender Gap in S.T.E.M | Rebecca Baron |
TEDxKids@BC* [Video]. YouTube. <https://youtu.be/PCWr6M1E9VQ>
- Thompson-Burdine, J., Telem, D. A., Waljee, J. F., Newman, E. A., Coleman, D. M., Stoll,
H. I., & Sandhu, G. (2019). Defining barriers and facilitators to advancement
for women in academic surgery. *JAMA Network Open; JAMA Netw Open*, 2(8),
e1910228. <https://doi.org/10.1001/jamanetworkopen.2019.10228>
- U.S. Bureau of Labor Statistics. (2021, January 22). *Labor Force Statistics from the Current
Population Survey*. U.S. Bureau of Labor Statistics. <https://www.bls.gov/cps/cpsaat11.htm>
- Vogel, L. (2019). When people hear “doctor,” most still picture a man. *Canadian Med-
ical Association Journal (CMAJ); CMAJ*, 191(10), E295-E296. <https://doi.org/10.1503/cmaj.109-5723>
- Yodovich, N. (2020). “Finally, we get to play the doctor”: Feminist female fans’ reactions to
the first female doctor who. *Feminist Media Studies*, 20(8), 1243-1258.
<https://doi.org/10.1080/14680777.2020.1810733>

Rhys Hagen

The Importance of Human-Animal Communication and Its Implications

ABSTRACT

In the animal kingdom, baring one's teeth is associated with signs of intimidation and postural displays of violence. For humans, baring one's teeth is a smile—a sign of happiness or greeting. The dichotomy of this nonverbal form of communication makes the complexity of understanding animals even more laborious. People have a tendency to anthropomorphize animals, so there may be instances where a dog is baring its teeth and, depending on context, can either be assumed to be “smiling” or getting ready to attack. The duality of this display causes confusion—baring one's teeth in the animal kingdom is usually a fundamental indicator of aggression, not a smile. If this is the case, why may there be doubt in discerning whether or not teeth-baring is aggressive? This is because behavior like this can also be considered what is called a “submissive smile,” where it is used to communicate to other animals and people that the dog is not interested in fighting, but rather is friendly and submissive (Michelson Foundation). These contradictory intentions share the same indicator, so how does a person know for a fact that a dog is “smiling” in a submissive or aggressive manner? The key is to look at other postural and verbal indicators. A person cannot ask a dog about its wellbeing and expect a direct answer, as dogs do not have the psychological capability of understanding complex thoughts or emotions. Being able to directly communicate with animals would be an intriguing development, as it would net possible health benefits and positive economical boosts—unfortunately, science has not reached this level. However, because of this communication barrier, it is important to have an understanding of non-verbal communicative patterns as well as an efficient method of communication with other animals in the animal kingdom.

WELFARE, SAFETY AND ECONOMICS

What sets humans apart from the rest of the animal kingdom is the ability to process complex thought and express it through spoken language. However, language is the acquisition of communication methods, meaning it is not the sole form of communication—non-verbal communication, for example, is a routinely used form of communication. There

are only elementary parallels to speech in other animals compared to humans, thus concluding that language is distinctively human (Prat 885). The difference between human language and perceived animal language is explained further in Roman Jakobson's 1962 studies, which proved that "several thousand human languages all have a common character, which can be traced in the way that their structure is built up layer by layer from simpler units" (Bronowski 1). Communication between animals "lack[s] this layered structure and consists rather of a vocabulary of discrete signals" (Bronowski). Because of the lack of a language, the majority of animals rely on the use of vocalized signals and body movements to "talk" with other animals. Unlike humans, animals are not able to layer their words or utilize syntax. Because of the paucity of sentence structures, animals cannot create complex oration or dialogue. But what animals lack in syntax, they make up for in other ways. For instance, elephants incorporate multimodal signals of seismic and acoustic cues that, when interpreted on their own or in combination, elevate an elephant's understanding of the call (O'Connell-Rodwell 287). Because animals cannot simply express their desires or feelings through language to humans, they rely on vocalized or physical cues. Aposematism is another great example of a non-verbal form of communication within the animal kingdom. This phenomenon is a strategy implemented by animals in an attempt to warn off predators through using distinctive colors, odors, sounds and chemical, morphological, and behavioral defenses (Rojas R350). Warning signals used by some aposematic species can also be used for intraspecific communication such as the postman butterfly "whose wing color pattern can serve a dual purpose in predator deterrence and mate attraction" (Rojas). In the animal kingdom, those that communicate through aposematism typically do so with vibrant colors which, to other animals, is typically an indicator that prey is nearby. While animals are equipped with the knowledge of each multimodal signal they utilize, humans have to perform an abundance of observations in order to understand what is trying to be communicated. This is where the importance of effective interspecies communication becomes apparent and why alternative methods must be utilized in order to understand each other.

The purpose of this research is to examine the importance of interspecies communication between humans and animals as well as the implications that it has on animal welfare, human safety, and economics. This paper will draw upon findings in relation to animal behavior and science, communication theories as well as evolution theories as a branch

of biology.

The first section, “Domestication and Social Relationships,” will discuss how animals and humans have been able to set the groundwork for communication through the domestication process and Social Learning Theory. The second section, “Safety Precautions and Animal Welfare,” will discuss how a mutual understanding of body language between humans and animals has led to increased animal welfare and human safety. The third section, “Economic Implications,” will discuss how intertwined humans and animals are, how reliant humans are on animals for economic reasons, and why communication is important for profitability.

Proper understanding of animal behavior and success with communication will allow for humans to further improve animal welfare and gain economical and safety benefits for both humans and animals. Thus, these sections used in tandem will discuss how, conducive to improving both human and animal quality of life, it is essential for mutual and efficient communication between both humans and animals.

DOMESTICATION AND SOCIAL RELATIONSHIPS

In order for efficient interspecies communication to take place, it has to be learned from experience with behavioral patterns and regular contact for both humans and animals. This can be seen through the application of Albert Bandura’s Social Learning Theory, which discusses how “learning is largely or wholly due to modeling, imitation, and other social interactions. More specifically, behavior is assumed to be developed and regulated by external stimulus events, such as the influence of other individuals, and by external reinforcement, such as praise, blame, and reward” (American Psychological Association). Like humans, animals learn through observation. Social Learning Theory is not strictly human-human or animal-animal, but also human-animal. This was shown in an analyzed study using humans and dolphins by the researcher and professor of University of Southern Mississippi, Dr. Stan Kuczaj. Communication between dolphins and humans was observed using an underwater keyboard with activated keys with varying meanings and actions (Kuczaj 118). The dolphins were left to observe the humans using the keyboard and then given a chance to use it. According to Kuczaj, “it is not clear that the dolphins understood that multiple keys were being used to create a more complex message in these cases. Regardless, the dolphins mainly used the keyboard by activating single keys at a time to signal the need

for human assistance to obtain things the dolphins desire” (118). The dolphins applied what they had observed from watching the humans and thus utilized it in a way that allowed them to ask for assistance from the humans. Animals can learn from observing animals, regardless of species, but they can also learn from humans if given enough time to observe. This is important in the context of interspecies communication: through observation and guidance, animals—to varying degrees—can learn to communicate with humans—also at varying degrees. This can be seen in how “dogs have developed traits which are absent in wolves, and which make them more suited to interacting and communicating with humans. For example, they are better at responding to human cues such as pointing and gazing, and they can learn and understand large numbers of spoken words and put these into categories” (Per and Wright 45). Because dogs have been selectively bred from wolves for thousands of years, they have had time to adjust and learn the behavioral patterns of humans and develop an understanding that has surpassed that of wolves. Not only is efficient communication and understanding learned through observation, but it is also learned through proximity of physicality and time.

Compared to non-domesticated animals, those that are domesticated are predisposed to improved human-animal communication. This is because the effectiveness of communication between humans and animals relies on the amount of time in which an animal has contact with humans. This concept is similar to how two humans who are well acquainted are more likely to pick up on each other’s behavioral patterns whereas two strangers are less likely to pick up on the other’s behavioral cues. A viable explanation, proposed by researchers, for how dogs have acquired the skills and understanding necessary for communication with humans, is known as the Domestication Hypothesis. The Domestication Hypothesis states that “during domestication [dogs] evolved an inherent sensitivity to human gestures that their non-domesticated counterparts do not share” (Udell et. al. 327). Domesticated animals have been selectively bred and genetically adapted over generations to live alongside humans; as such, they are genetically distinct from their wild counterparts (Daly). Not only are domesticated animals always in contact with humans in one form or another, but they have been bred for specific traits and purposes by humans. The difference in capabilities for interspecies communication, more so animal-human, is trait dependent. This gives them an advantage in communicating with humans compared to their wild counterparts. An advantage also exists in mental capabilities such

as learning and understanding. Due to domesticated animals' inherent sensitivity to human gestures, they are genetically predisposed to better interspecies communication skills. Communication is a dance for two that only gets stronger the more it is performed, meaning that not only are humans trying to learn animal behavior, but animals are also trying to learn human behavior and map out the appropriate response to recurring behavior. For instance, service animals and animals that partake in animal-assisted therapies have been taught to indicate and look out for specific behavioral patterns. There are approximately 500,000 service dogs currently in the United States, all of which have been trained to aid humans in everyday life (Cosgrove). The use of dogs in therapy is a result of thousands of years of constant contact with humans which has enabled them to pick up the cues necessary for understanding human behavior. Other animals such as horses have built social bonds with humans and thus have also begun to pick up the behaviors necessary for understanding humans. While older horses have picked up different non-verbal communicative signals through constant contact with humans, "young horses that had only limited contact with people showed that they were only able to use body orientation, not head orientation or eye direction as a cue (Proops et al.). Together, these experiments clearly demonstrate that the understanding of our body language is something horses must learn from experience⁶⁵. In order for interspecies communication to be effective, it must be learned from experience and exposure. To understand what will improve the quality of life for animals, it is important to understand what they need, and this can be seen through behaviors. If an animal has limited contact with a human, how will it be able to differentiate and understand the various signals a human may give? Animals with limited contact may only be able to use certain body language cues in a disjointed fashion and thus are limited in their capabilities to interpret cues. This shows the importance of frequent human-animal contact in cementing a solid form of interspecies communication as well as the differing levels of this communication.

SAFETY PRECAUTIONS AND ANIMAL WELFARE

Understanding what is being communicated through body language and the handling of animals in an ethical fashion allows for the development of proper animal welfare and human safety. Because of the "mutual interdependence" of humans and animals, the two are in

constant contact with one another; being able to effectively communicate is critical for the safety of both human and animal involved in an interaction (Alves 1). Dr. Joy Mench, an animal science professor at the University of California Davis writes, “behavior has another important function: providing information to human caretakers about the welfare of the animal; however, thorough observation and a sound knowledge of species-typical, and often individual-specific, behavioral patterns are required to interpret this information” (24). Because animals cannot directly talk with humans, observing their behavior will help with providing the necessary information to give adequate welfare and safety precautions. Understanding animal behavior is essential for an efficient understanding of animal needs, welfare, and safety. A person oftentimes will not be able to correctly interpret what an animal is trying to convey, so it is important to have a baseline understanding of “species-typical” behavioral patterns. This can be achieved through thorough observation as well as hands-on experience. It is especially beneficial for a human to have a close relationship with animals on an individual basis because, much like humans, the animal can have an individual-specific behavioral pattern. These personalized behaviors may be an indicator of how an individual animal is feeling instead of using species-typical behavioral patterns.

Having a sound understanding of animal behavior will allow for the betterment of human safety when handling animals. For a person, being able to understand what an animal is trying to communicate through body language and behavior is invaluable. A study of several Minnesota dairy farms showed that 73.3% of injuries reported were due to cattle interactions (Sorge et al. 4635). A majority of these injuries were the result of the handler not paying attention to the animal’s behavior. These incidents can be prevented if the human is educated on what behavioral indicators to look for. Unfortunately, it must be noted that even with repeated exposure to animals and understanding their communicative behaviors, people are still at risk for injury regardless of how many preventative measures are taken. Another statistic showed that every year, roughly 4.5 million people are bitten by dogs in the United States alone (Delft et al. 1). Due to their historical importance in human development and relationships, dogs and their behavior are the most well-known to humans out of all other animals in the animal kingdom. Even though this is the case, people can still be injured by a dog even if appropriate safety precautions are taken. If people are still being attacked by dogs, whose behavioral patterns have been well studied and documented, how are people less

likely to get injured when working with other lesser studied animals? The answer is through continuous exposure and observation. Safety can never be absolutely guaranteed when working with animals because, at the end of the day, they are still animals and can react according to instinct. The only way to combat this is through continued learning of animal behavior and appropriate communication.

An understanding of animal behavior and efficient interspecies communication increases the overall quality of animal welfare. Research has shown that the more farmers believe that their livestock are sensitive to human contact that, “the cleanliness of the barns accounted for 19% of the differences between farms in daily weight gain and 22% of the differences between farms in feed efficiency” (Rushen et al 146). A mutual understanding and respect for animals through daily exposure and communication allows for the person interacting with the animal to be more inclined to care about its welfare. This plays back into how humans have a tendency to anthropomorphize and bond with animals. From a study of 208 university students, 92% of dog and cat guardians regarded their companion animals as family members (Faver et al. 267). This ability to bond and, by extension, communicate with animals leads to the desire for better animal welfare. When a human is able to pick up on distressed animal behaviors, the human may be able to help the animal when it cannot help itself. For instance, when “faced with a sick or injured wild animal there are three possible courses of action: no intervention, treatment or euthanasia. From a purely welfare perspective, there are circumstances under which each of these is justifiable” (Kirkwood and Sainsbury 237). It is up to the discretion of wildlife organizations and the government to determine which course of action is appropriate for the circumstance, but there needs to be an in-depth understanding of animal behavior and lifestyle in order to make these informed welfare decisions. This is why it is important for humans to learn proper methods of communication with animals, as non-verbal cues and displays can be indicative of potential stilted welfare.

ECONOMIC IMPLICATIONS

Animals have been integral to the advancement of humans for centuries, especially as it relates to economic welfare. For example, nearly 18 million horses were used for farming purposes during the 1920s in the United States (Hintz 337). Dogs used in animal-assisted therapy to

rats and mice are able to identify and characterize genes responsible for non-syndromic hearing loss in humans (Bryda 208). The use of animals in everyday life is constantly pushing for advancement. Animal use has been documented for well over 32,000 years, originating from drawings on cave walls done by human Palaeolithic ancestors (Kalof 3). Leading up to the twenty-first century, with thousands of years of interaction, animals have intertwined themselves into human culture and life to a degree that their welfare and productivity have economic benefits and disparities; “resulting in close connections of mutual interdependence” (Alves 1). With repeated exposure to one another, it was nearly inevitable that the lives of both animals and humans would be influenced by one another. The farming industry in the United States alone is a billion-dollar industry where, in 2019, “cash receipts for animals and animal products totaled \$176.0 billion” (USDA). Because of the economic impact that livestock and other sectors of animals have, it is imperative that humans understand what animals are trying to communicate with them when the circumstance arises.

Understanding animal body language and vocal cues, especially when working in an industry where animal products are the source of income, is critical for maximizing profits and animal welfare. A study found that “even after adjusting for herd size and bulk tank SCC, cows of producers who had participated in stockmanship training produced, on average, around 810 kg more milk per lactation than cows of producers who had not done stockmanship training” (Sorge et al. 4637). The implications of this study suggest that teaching proper and ethical handling of cattle and livestock (stockmanship) can result in a higher yield of milk production, thus equating to more profits for farmers. With the knowledge that cows produce more milk when less stressed and properly handled, farmers can understand the importance of reading an animal’s body language. In the realm of animal husbandry, it is imperative to have a good bond with animals and to provide an environment that enables better productivity and mutual understanding between both the human and the animal. For instance, “farmers who have more confident animals and better productivity are those who give the most importance to the animal in their profession, express the most pleasure in working with them and convey empathy for them. Most of them report daily physical contact with their sows” (Pol et al. 8). Several studies, much like the cattle study, have shown how animals working in stressful environments do not produce to their full capacity. Continued research has shown how physical contact, conveying empathy, and general positivity with animals have

increased production. More confident animals, in relation to human contact, are a by-product of corrective animal welfare and increased positive human-animal interaction and communication. This once again indicates that, through more communication and the betterment of animal welfare, animals in all fields have higher rates of productivity.

CONCLUSION

As this paper has discussed, a better understanding of animal behavior will lead to higher quality communication as well as proper animal welfare, human safety, and economic benefits. As suggested, animals with a close social relationship with humans will yield more effective human-animal interactions and understandings. Therefore, the findings of this paper conclude that, in order to see continued improvement in animal welfare and human safety, humans need to learn more about animal behavior and body language to effectively communicate. This can be achieved either through observations of various species or through direct contact with animals—though observation should be performed before direct contact with animals in order to ensure human and animal safety. Maybe then, it will be easier to distinguish in dogs the difference between a submissive smile and intimidation. Through researching for this paper, several questions came to fruition: At what point during human-animal interaction and communication does the animal feel safe? Is there a definitive instance or moment where an animal will feel safer and more comfortable through communication, or is it case-by-case dependent? A lot of the research presented has used domesticated livestock as case studies in animal husbandry, but it would be interesting to see if the results would be the same for animals such as ones found in zoos. Would they reap the same benefits of domesticated livestock in regard to quality human interaction? This would have to be done through case studies and more research, which seems to be an increasingly popular topic in animal science studies.

WORKS CITED

- Alves, Rômulo Romeu Nóbrega, and Ulysses Paulino de Albuquerque. Ethnozoology: Animals in Our Lives. *Academic Press*, an imprint of Elsevier, 2018.
- “APA Dictionary of Psychology.” *American Psychological Association*, American Psychological Association, dictionary.apa.org/social-learning-theory.

- Bronowski, Jacob. "HUMAN AND ANIMAL LANGUAGES." *To honor Roman Jakobson : essays on the occasion of his 70. birthday*, 11. October 1966, De Gruyter Mouton, 1967, pp. 374-394. De Gruyter, <https://www.degruyter.com/document/doi/10.1515/9783111604763-029/html>.
- Bryda, Elizabeth. "The Mighty Mouse: The Impact of Rodents on Advances in Biomedical Research." *Missouri Medicine: The Journal of the Missouri State Medical Association*, vol. 110, no. 3, 2013, pp. 207-211.
- Cosgrove, Nicole. "10 Interesting Service Dog Statistics in 2021." *Doggie Designer*, 19 May 2021, doggiedesigner.com/service-dog-statistics-and-facts/.
- Daly, Natasha. "Domesticated animals, explained." *National Geographic*, 2019, <https://www.nationalgeographic.com/animals/article/domesticated-animals>.
- Faver, Catherine A. "Love, Safety, and Companionship: The Human-Animal Bond and Latino Families." *Journal of Family Social Work*, vol. 11, no. 3, 2008, pp. 254-271. Taylor-Francis Online, <https://www.tandfonline.com/doi/full/10.1080/10522150802292350>.
- Hintz, Harold F. "Thoughts about the History of Horses." *Journal of Equine Veterinary Science*, vol. 15, no. 8, 1995, pp. 336-339.
- Jensen, Per, and Dominic Wright. "Chapter 2 - Behavioral Genetics and Animal Domestication." *Genetics and the Behavior of Domestic Animals* (Second Edition), vol. 2, 2014, pp. 41-79. *Science Direct*, <https://www.sciencedirect.com/science/article/pii/B978012394586000020?via%3Dihub>.
- Kalof, Linda. *Prehistory, before 5000 BC*. Reaktion Books, 2007.
- Kirkwood, J.K., and A.W. Sainsbury. *Ethics of Interventions for the Welfare of Free-Living Wild Animals*. vol. 5, Institute of Zoology, 1996.
- Kuczaj II, Stan A. "Are Conversations Between Dolphins and Humans Possible?" *International Journal of Comparative Psychology*, vol. 26, no. 2, 2013. eScholarship, https://escholarship.org/uc/uclapsych_ijcp.
- Ladewig, Jan. "Body Language: Its Importance for Communication with Horses." *Journal of Veterinary Behavior*, vol. 29, 2019, pp. 108-110.
- Line, Scott, and Victoria L. Voith. "Dominance Aggression of Dogs towards People: Behavior Profile and Response to Treatment." *Applied Animal Behavior Science*, vol. 16, no. 1, 1986, pp. 77-83.
- Mench, Joy. "Why It Is Important to Understand Animal Behavior." *ILAR Journal*, vol. 39, no. 1, 1998, pp. 20-26.
- O'Connell-Rodwell, Caitlin E. "Keeping an "Ear" to the Ground: Seismic Communication in Elephants." *Physiology* (Bethesda, Md.), vol. 22, no. 4, 2007, pp. 287-294. American Physiological Society, <https://journals.physiology.org/doi/full/10.1152/physiol.00008.2007>.
- Pol, F., et al. "Human-animal relationship influences husbandry practices, animal welfare and productivity in pig farming." *Animal*, vol. 15, no. 2, 2021, pp. 1-8.
- Prat, Yosef. "Animals Have No Language, and Humans Are Animals Too." *Perspectives on Psychological Science*, vol. 14, no. 5, 2019, pp. 885-893. SAGE Journals, <https://doi.org/10.1177/1745691619858402>.
- Proops, Leanna, et al. "The Responses of Young Domestic Horses to Human-Given Cues." Edited by Martine Hausberger. *PLoS ONE*, vol. 8, no. 6, 2013, p. 11. NCBI, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3686775/>.
- Rojas, Bibiana, et al. "Aposematism." *CORE*, 2015, pp. R350-R351. Elsevier Ltd., [core.ac.uk/display/82509149?utm_source=pdf&utm_medium=banner&utm_campaign=pdf-decoration-v1](https://www.elsevier.com/locate/core).

- Rojas, Bibiana, et al. "Multimodal Aposematic Signals and Their Emerging Role in Mate Attraction." *Frontiers in Ecology and Evolution*, 3 July 2018, doi.org/10.3389/fevo.2018.00093.
- Sorge, U., et al. "Perception of the Importance of Human-Animal Interactions on Cattle Flow and Worker Safety on Minnesota Dairy Farms." *Journal of Dairy Science*, vol. 97, no. 7, July 2014, pp. 4632–4638.
- Udell, Monique A R et al. "What did domestication do to dogs? A new account of dogs' sensitivity to human actions." *Biological reviews of the Cambridge Philosophical Society* vol. 85,2 (2010): 327-45. doi:10.1111/j.1469-185X.2009.00104.x
- USDA ERS. "Farming and Farm Income." *USDA US Department of Agriculture*, 2021, <https://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/farming-and-farm-income/>.
- van Delft, Eva A.K., et al. "The dangers of pets and horses, animal related injuries in the Emergency department." *Trauma Case Reports*, vol. 20, 2019, pp. 1-5. Elsevier, <https://www.clinicalkey.com#!/content/playContent/1-s2.0-S2352644019300135?returnurl=https:%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS2352644019300135%3Fshowall%3Dtrue&referer=https:%2F%2Fwww.google.com%2F>.
- "What Is Submissive Smiling in Dogs?" *Michelson Found Animals Foundation*, www.foundanimals.org/submissive-smiling-dogs/.

Adam Giovanelli

The Camera in the Digital Age: Photographic Memory, Truth, and Cognition

“Photography never lies; or rather it can lie as to the meaning of the thing... never to its existence.”

Roland Barthes, Camera Lucida

ABSTRACT

*The camera and photographic image have occupied a central role in the information systems of the digital age. In doing so, the democratization of photography has offered a powerful extension of our ability to archive but has demonstrated through its authority and widespread currency that it can disrupt the power of visual distinction. The objective of this project is to analyze photography through its use as a digital medium and its presence in social media in order to identify how it can manipulate memory, cognition, and self-image. However, through a dynamic understanding of Roland Barthes' and John Berger's discussions on photographic memory, we can understand the delicate threshold between a constructive use of photography as a therapeutic tool and as a means to perpetuate an obsession with our mortal shortcomings. Barthes' book *Camera Lucida* discusses how photography preserves a subject in a matter-of-fact way and perpetuates that subject while invoking loss and death. Berger, in "Ways of Seeing," submits to human subjectivity and reflects upon how images are contextual (Barthes, 1980; Berger, 1972). Through this lens, it becomes increasingly clear that photography and photographic images are tethered to our perception of memory and are unique vehicles of reflection. The analysis will recontextualize these discussions alongside exploitation through cognitive offloading, states of depression, an obsession with self-imaging, and the implications of integrating photographs into systems of information as a new iteration of the general lexicon. What becomes evident is that exploitation of photography's evidentiary quality is not inherently ill fated, but rather a survival tool to those with memory-affecting disorders. The analysis raises a new perspective on photographic memory: the capacity for memory may be the distin-*

guishing factor in using photographic preservation for manipulation versus a need to remain functional in a state of otherwise perpetual confusion.

INTRODUCTION

In the thirteenth century, people huddled into a dark room where the magician Arnaud de Villeneuve used the Camera Obscura to project disembodied images from a theatrical performance outside. The audience *could* have watched the actors in a more traditional, open-air setting but instead, it appears, preferred the novelty of not being present and watching it *elsewhere*. An image's currency is that it always refers to a subject. It is always a *photograph of a subject* not simply a *photograph* and it is evidential in its accuracy without requiring personal witness. In the mid-nineteenth century Louis Daguerre developed the first practical photographic process, the Daguerreotype, when he used silver plates, mercury, and common salt to produce an exposure in just under a half hour. The process was labor-intensive and required specific equipment, much of which was not generally accessible. Both Villeneuve and Daguerre produced artificial representations of an instant that we do not have to be present for. Further discussion by Roland Barthes, a leading French structuralist and thinker in the twentieth century, theorizes photography objectifies images as it is "never [immediately] distinguished from its referent" and thus photographs "[belong] to that class of laminated objects whose two leaves cannot be separated without destroying them both" (p. 5, p. 6). Photography, by its evidentiary quality and typification of subjects, displays what *was* will always *be* through photography and thus has a presumed innocence that preserves its status as authentic. The photographic image occupies an authoritative role in our information systems as it halts the time with unmatched precision; it is inherently a preservation device.

Naturally, the ability to preserve in exact detail implicates a discussion of honesty. The camera has long been a staple of global society, and it is used across class distinctions. It has been democratized through technological advancements and rapidly integrated into common discourse. However, because it objectifies, photography can be used to assert typification in place of personalization just as "the Photograph is flat, platitudinous in the true sense of the word" (p. 106). Photographs hold no opinions but rather project observable characteristics that require opinions to be placed on them while being ubiquitous, reflecting their currency in the digital age. It does not lend the subject the ability to respond

to analysis but instead objectifies it so that its language is consistent in projection. This seriously threatens our ability to decipher photographic deception. A Fairfield University study found that when participants were told to take photographs of objects at a museum exhibit versus not taking photographs, the former had far greater trouble in recalling vital information, meaning that cameras narrow our attention (Henkel, 2013). Another case, led by Alixandra Barasch in the *Journal of Consumer Research*, concluded that the process of sharing images on social media alters our recollection of the events, increasing self-consciousness, and invokes a third-person perspective (Barasch, Zauberaman, & Diehl, 2017). The process of photographing in the age of social media greatly hinders cognitive functions. When coupled with the matter-of-factness of an image, the result is a degradation of the cognitive capabilities of perception and relationship and an ultimate compromising of memory and vigilance for honesty. In 2019, an average of 3.2 billion photos were shared per day and the majority of these instantaneously via the internet (Brandwatch, 2019). Now that 77% of Americans own smartphones with camera functions and 7 out of 10 are using social media as an extension of their social circle, it can be reasoned that a majority of Americans contribute to the obsession with imaging (Pew Research Center, 2021). The democratization of photography has offered a powerful extension of our ability to archive but in doing so it has demonstrated that through its authority, it has disrupted the power of visual distinction.

With this in mind, photography will be analyzed through its use as a digital medium and prevalence in social media. Then, we will investigate the implications of photographic manipulation on individual wellbeing. Ultimately, we will recognize the delicate threshold between a constructive use of photographic memory as a therapeutic tool and as a perpetuation of our tendency to obsess over our mortal shortcomings. This discussion will be within the frame of the philosophies on photography as a memory device of Roland Barthes and John Berger, a mid-century artist and thinker. Barthes's book, *Camera Lucida*, discusses how photography preserves a subject, in a matter-of-fact way, and perpetuates that image while representing loss and death. Berger in "Ways of Seeing" submits to human subjectivity and reflects upon how images are contextual (Barthes, 1980; Berger, 1972). Through this frame, it becomes increasingly clear that photography and photographic images are tethered to our perception of memory and are unique vehicles of reflection. Thus, photography becomes an obvious cure for the mortality of memory. Yet

the development of photography through modernity has proven to cause an anxiety for preservation solely because it can be done and not necessarily because of its novelty. That is, each moment *can* become equally memorable. Daguerre was clearly a student of human nature and able to perceive that this ability was something to be democratized. What he did not predict was the utter ordinariness of photography as an extension of human senses—a rather banal function where its implications are taken for granted.

The primary objective of this paper is to analyze how photography has disrupted cognitive functions of perception and relationship while offering a means of memory retention. From this vein, it will investigate the effect this has on memory, information processing, and its relationship with social media. Thus, what are the effects of photography's adoption into the age of social media? The reliance on photography for the retention of information has handicapped our visual acuteness thus reducing our aptitude for autonomous cognition and an accurate perception of reality. However, there may be a potential benefit after analyzing the conflict. Ultimately, the recognition of Barthes's evidentiary quality of the photograph permits an exploitation of the camera's *presumed* objectivity.

COGNITIVE OFFLOADING RESULTING FROM PHOTOGRAPHY

The anxiety to preserve has encouraged routine photography which was ultimately encouraged by the democratization of the camera. This in turn damages our capability for meaningful or even accurate systems of memory. At the end of the nineteenth century Kodak released a personal camera geared towards a more universal audience, with the tagline, "you press the button, we do the rest." Anyone could be a photographer and the time and effort were far less demanding. Physical experience, documentation, and reflection occurs in the same instance which leaves no time between the moment's occurrence and the novelty of remembering in the future. This created a new *photographic memory*, which transfers the function of documentation to a machine in a cognitive offloading process (Soares & Storm, 2018, p. 155). In case study "Forget in the Flash: A Further Investigation of the Photo-Taking-Impairment Effect," Julia Soares and Benjamin Storm discuss modern photography's impact on the cognitive process of memory. Through photography, indi-

viduals are far less likely to encode their experience (158). In other words, they are less likely to transfer the experience into something their brain can accurately decipher and instead rely on an external process coined as *transactive memory*, a form of cognitive offloading that uses external systems that know more than any two individuals (Gilbert & Risco, 2016, p. 682). For instance, Soares and Storm would argue a photographic system may be our digital camera galleries or social media pages. The “we do the rest” applies to both preserving *and* remembering and as it becomes increasingly easy to store data, there is no need to be selective; every moment can be *the moment*. To take it a step further, smartphones may be used to take pictures of parking spots, documents, and items at the store. This transfers even mundane information to the collective photographic system and initiates transactive memory, forcing us to *rely* on them to recall specific details. This can be likened to the prevalence of vast information systems in modern society; it is easy to know *where* information is (an image, the internet, smartphone reminders) but harder to recall what that information actually is or what significance it holds. That is not to say *all* photographed moments are mundane but that the tendency towards cognitive offloading diminishes the novelty of those that are not. With this in mind, the anxiety to preserve may be perpetuated by the failure to remember. Photography has effectively encouraged a new means of cognition that prioritizes momentary preservation over detailed remembrance.

DEEPPAKES AND PHOTOGRAPHIC MEMORY

A reliance on transactive memory renders our perceptions of specific details obsolete. If the ability to recall is compromised, the ability to accurately distinguish fact from fiction is sacrificed. A unique facet of photography is its ability to deceive, and this is most notable in the deepfake. A deepfake is a still image or video in which an individual's likeness has been altered to appear as someone else. The process is mostly associated with malicious intent or the spread of false information. Due to the extent of data sets and algorithms, deepfakes can mimic reality with haunting precision. Since we tend to submit to cognitive offloading, we are inclined to rely on the system to inform our perception and judge the validity of images. A case study by researchers at Sungkyunkwan University in Suwon, South Korea demonstrates that the facial recognition technology of Microsoft and Amazon can be fooled 78% of the time

when using deepfakes. The images' likenesses—using pictures of celebrities—were scored based on their accuracy to the original (Tariq, Jeon, & Woo, 2021). This suggests Berger's opinion that photographs quote rather than cite from reality (Berger, 2002, p.53). While deepfakes are, in a sense, quotations of their owners, they are *accurate*. The potential threat is that deepfakes perpetuate false instances of reality and contribute to the cognitive offloading process. When misinformed representations are put in conjunction with social media, the ultimate discernment between reality and manufactured reality is threatened. Columbia University Business School supplements this through an investigation of fact-checking habits of 175 middle-aged Americans when alone or when they perceive social presence. Alone, 17% of the total headlines were flagged for fact checking, while 11% were flagged by the group condition. In a subsequent experiment, "both alone and group conditions experienced less fact-checking when the headline appeared as a social media post (e.g. Facebook), while the traditional platform exhibited the same tendencies as the prior experiments" (Jun, Meng, & Johar, 2017, p. 2-3). This suggests social media increases perception of social presence and reduces fact-checking and thus the ability to identify and determine photographic truth is diminished. In this way, seeing *could* be believing, and as long as what the individual sees confirms their predisposed bias in their social circles, its validity has little to no bearing (Mitchell, Gottfried, Barthel, & Sumida, 2018). With this knowledge, photographic exploitation is not only possible, but seemingly encouraged. Susan Sontag illustrated this potential when she wrote: "The sense of the unattainable that can be evoked by photographs feeds directly into the erotic feelings of those for whom desirability is enhanced by distance...they are attempts to contact or lay claim to another reality" (Sontag, 1970, p. 12). Perhaps the distance experienced in photography is not between subject and observer, but deception and truth. In the absence of detailed remembrance and the influence of photography's evidentiary quality, the medium replaces vigilance for acceptance. The malleability of photographic information proves this as it defies the assumed conventionality of our universal truths. In this way, phenomena like deepfakes are not dangerous because they are fake, but because we become confident in an artificial misconception of reality that is shrouded by ignorance. Falsities can hide where truth is in flux; if you are looking to hide a tree, use a forest.

PHOTOGRAPHY'S EXPLOITATION IN THE SOCIAL MEDIA AGE

With evidence of photography's permeance in systems of truth, we can entertain the idea of its ultimate exploitation. The photographic record, deepfakes excluded for the time being, becomes evidential proof of *how* we existed, regardless of cognitive offloading. A recognition of this quality of photography allows an exploitation of future reminiscing because it substitutes *reflection* for *curation*. In the age of social media, this can be understood by the nature of the pose. To Roland Barthes, "By giving me the absolute past of the pose (aorist), the photograph tells me death in the future...They have their whole lives before them; but also they are dead (today), they are then already dead (yesterday)" (p. 96). Barthes's language is essential here because he specifies the verb *pose* with the Greek word *aorist*, an unqualified past tense of a verb without reference to duration or completion of the action. The photograph is the one instance where life and death are in flux. The very fact that an image is in the past requires that the subject is approaching death, this is what Barthes means by death in the future. This is also the importance of Barthes using the word *pose*. In the absolute past of the pose, there is nothing inhibiting that moment, and it exists precisely as is; it is a dead moment. Posing for a picture is, in a way, a form of dying through preservation. But perhaps when Barthes writes of an "anterior future," he means there is a naivete amongst photographic subjects. The particular subject Barthes writes of is sentenced to die—death is moments away—and yet in the precise instant that he was captured, the subject still has his life ahead of him. It is eternal *how things were*. The photograph preserves the purity of the pose because it defies instead submitting to the future, carrying with it a specific, uninhibited likeness.

The pose in the digital age is less thoughtful than Barthes suggests because social media and digital photography eliminate the latency between preparing an image, its exposure, and its ultimate delivery. Not only that, but observation and critique is immediate and *measurable*. In a paper from La Trobe University in Australia, Annukka Lindell outlines how Instagram's economy of "likes" results in biases to preferred poses and that the process of liking is largely instinctual (Lindell, 2019, p. 603). Public access to billions of images makes it easier to identify what poses receive the most likes, and that is reflected in what is posted. Thus, it seems that posing for social media is a dishonest act. This reigns most

true when looking at the function of the photo-messaging app Snapchat, which alone shares 2.1 million images daily (Statista, 2021). Here, an image can be heavily scrutinized and constantly recaptured into a manicured version; it is self-imaging and reflection in real-time and it can feed into image disorders that fuel anxiety and ultimately, depression. Those images focus on what we, as social media users, want to see and neglects everything else. Barthes would then conclude that, even if it is not honest, a social media pose takes advantage of its absolute past to preserve hyper-specific instances in accordance with social demands and personal obsessions. So, posing becomes a commodified and superficial act. This is not restricted to social media and is instead a definitive characteristic of photography as a controversial informational tool. Photography, in its precision of the pose, challenges our ability to identify the truth of things because it grants everything the same predisposed token of honesty.

Since photography can be deconstructed into measurable and commodified details through modes such as the pose, it can typify subjects and inform society on how to describe groups of people, substituting active information processing for a passive acceptance of photographic truth. The production and distribution of Black photography—particularly the Agassiz daguerreotypes—is a vehicle with which to understand this. The images were produced with the idea that if the subjects are posed in a certain way and shown in a particular light, the photographs can be used as evidence of the inferiority of the depicted Black bodies (Harris, 2014, 13:15). In fact, Brian Wallis in “Black Bodies, White Science” maintains that the typological photographs that became popular in the mid-1800s were assumed to be *self-evident* in their inferiority (Wallis, 1995, p. 49). Ease of access, which is in how they are to be perceived opposed to what they *actually are*, implicates an early instance of cognitive offloading. The images of slaves promoted *simple essences*, or indispensable qualities that propose that the individual of this likeness is inextricably bound to that racial type or rather, this specific self-image that is undeniably you.

Perhaps the most powerful facility of photography is the superfluity of the self. According to York University Department of Psychology, female social media users “who took and posted selfies to social media reported feeling more anxious, less confident, and less physically attractive afterwards compared to those in the control group.” Not only that, but this persisted when given the option to retake or edit the images (Mills, Musto, Williams, & Tiggemann, 2018, p. 89). While the slave images were instances of unfair objectification, the act of taking a selfie

is a personal choice and manipulation is optional. However, the result is the same: the photo enters the public catalogue, is perceived, and then informs an aesthetic. So, while photographic truth authenticates manipulation, it creates an anxiety to project a desired image. In other words, this use of posing subverts Barthes interpretation of the pose because it is specifically and constantly curated to include what was explicitly intended, nothing more. It is intentional in its presumed innocence rather than passive.

PHOTOGRAPHIC TRUTH IN MEDICINE

The intentionality of photography is not new, but its integration into modern imaging, particularly through means that catalogue photos into vast repositories of information, is. The widespread use of photography is not strictly limited to this arena but inhabits social networks outside the digital realm. The dishonesty of a photographic image offers realities previously unattainable because of the linearity of time and limit to the precision of man. That is, a camera offers as precise an image as the human eye but with the persistence of death. Returning to the camera's relationship with typology, in "A Lens on the Other," the images of aboriginal people in Australia were framed and observed through *anthropometry*, where humans are described using physical characteristics, measurements, and proportions (Maxwell, 1999, p.2). This *suggests* photography has anatomical accuracy. It is then obvious how photography may hold a valuable purpose in the medical world where precision is valued. The medium has become increasingly present in the medical profession from its use as a documentary device and informational tool (Pasquali, 2020). Each of these suggests that photography is being used in lieu of traditional documentation such as visual observation and manual recording. Considering the impact of cognitive offloading, it can be reasoned that there is a transactive relationship between medical photography and the overall medical informational system. In considering the impact of deepfakes, medical professionals from Harvard and Stanford University have been able to draw a relationship between plastic surgery and the proliferation of photography in medicine: "As a field that *quantifies* success with reconstructive and aesthetic outcomes, the practice of plastic surgery necessitates documentation of outcomes through *standardized* photographic images [emphasis added]" (Crystal, Cucculo, Ibrahim, Furnas, & Lin, 2020, p. 1079). This relates to the rise of photography in

the medical world as it is reduced to measurements of preferred treatment and examples of success. If we investigate further, photographs can be used to naturally superimpose model features on prospective patients, even if anatomically unreasonable (Crystal et. al, 2020, p.1084). This is not novel: in the 19th century blue glass was preferred to photographers as a skin-lightening treatment for superior images. At this time, standards of health were inseparable from racial ideals (Sheehan, 2011). Manipulation for the sake of medical approved beauty is well integrated into the field. What this ultimately implies is that through photography, we can reimagine personal images with the predisposed authority of the medical profession. As we have discussed previously, the collective trove of images we interact with inform our aesthetic preferences. Now, it is possible to skip the photographic process and design ourselves with the same precision as if we were actually photographed. Not only does this complicate the existing anxieties regarding self-imaging but it reasserts the superficiality we experience in our image-centric world. If the manipulation of truth through photography exists in medicine, particularly when concerned with aesthetic preferences (which is broader than plastic surgery), the threshold between what is medically necessary and what is desirable narrows. It is reasonable to assume that deepfakes, for instance, can be used to serve nefarious ends and exploit the photographic information hub to falsify testimonials. In this case, photographs are being used to inform new visual realms that disrupt the normal past versus present dynamic of photography. With the ease of digital photography, this becomes an anxious obsession to exploit photographic memory and confuse the *how we were* with *how we wanted to be*. In this way, modern photography becomes an unappeased desire to be someone else, somewhere else. Our image-centric reality encourages manipulation to gain personal currency, underlying each instance of image-making with anxiety. And yet, to those who have lost their capacity for memory, the *pure* absoluteness of the photograph projects certifiable evidence in a constructive manner. When everything else is doubted, the subject is still there, and memory can be mimicked. Perhaps, photography is as much of an obsessive tool as one for survival and exploitation can be beneficial.

PHOTOGRAPHY AS A SURVIVAL TOOL

What is the significance of being able to craft your own self-image? Or rather, more importantly, *what is the significance of being able*

to remember that image? It is a privilege, not a given. If photographic exploitation relies on the ability to be intentional, the ultimate mortality of memory brought about through Dementia undermines this. In discussing memory and identity in photography, its certifiability informs us how we *should* remember, not how we actually remember (Van Dijck, 2008). This access to the past permits a “retrograde projection” and thus the idea of what has been, what is, and what will be informs our current image-making to satisfy desired ends (2008). Those with Dementia do not have this luxury to constantly revise their appearances as they are bound to a scarcity of memory. Dementia increasingly inhibits the novelty of photography, memory, and while it may seem all is lost, photography can maintain an appearance of it. In a study done regarding communication impairments by a linguist at Northwestern University, Dr. Karen Hux, and a Human Sciences professor at Bowling Green University, Carly Dinnes, the idea of *reminiscence therapy* was explored in order to combat the lack of social engagement in Dementia patients. The therapy used photographs as props to encourage recollection or discussion. The result was that the photographs did not necessarily improve memory but rather communication and interaction skills (Hux & Dinnes, 2019, p.94-5). Perhaps this is because of photography’s evidentiary quality: its absoluteness provides those with Dementia a quality of conversation otherwise unattainable. For them, to engage in current events is difficult, but through photography they can be certain of what is being discussed because of its certifiability. Here, the users cannot recognize exploitation, but use it, nonetheless. In the case of Dementia patients, the medium is used as a tool to mimic memory. Returning to cognitive offloading, perhaps this is the benefit in relying on an external system of information. The individual, unlike social media users or anthropologists, uses photography’s objectivity to maintain relevance.

The ability for self-imagining exploitation in photography is dictated by the death of the subject. However, the death, while refusing further affliction by a typical observer, becomes a powerful self-identity tool in those who are unaware of this quality. The former encourages an anxiety that is reflected upon by Barthes: “I do not stop imitating myself, and because of this, each time I am (or let myself be) photographer, I invariably suffer from a sensation of inauthenticity, sometimes of imposture” (Barthes, 1980, p. 14). Each time he is photographed he projects what he wants others to think of him. This inauthenticity is subjective until it is objectified by the camera and added to the catalogue of his personal

image. This is where death is observed. To Berger, “soon after we can see, we are aware that we can be seen,” and thus if someone with dementia does not remember the photographs nor understands the perpetuation of their image, they are no longer aware of themselves being seen (Berger, 1972, p. 9). Whereas photographic imaging demands a sort of choreography, there is no intention in or methodology in the imaging of dementia patients. They are released from the anxiety that every image certifies an appearance, and they are defined two-dimensionally without a third dimension of opinion. This helps in being able to exploit what Barthes calls a “specter” of himself. An individual with dementia does not engage in self imaging but can benefit from a photograph’s ability to preserve their past; the disembodied spirit (or specter) is not affected by its owner. They carry the identities of those photographs without regard to growth. When we look at a photo, we see someone who, for all intents and purposes, is dead. The person we know now is either truly dead or someone completely different. Here, its inauthenticity is beneficial when access to memory is hindered. They can no longer engage in retrograde projection, and while the images of their past self are foreign, they are not *independent* of them. The inability to reconcile their past identity with the present prevents new self-imaging and avoids anxiety. Not only that, but “since the skilled photographer can make the image look as he wants it to, and knows he can, photographers should be aware of the social content of their photographs and be able to talk about it at length. As a rule, they are not.” (Becker, 1974, p. 11). The subject is objectified twice over. Once by their own intent and once again by the stylistic intent of the photographer. This duality reduces the portrait to a rather superficial representation of the subject. From this perspective, it would seem ridiculous to assign importance to something that cannot respond. Superficiality does not demand exclusive knowledge that can suffer due to the mortality of memory. Still, to those with dementia, the loss of memory makes every image a new experience.

Dementia patients, whilst progressively losing short term memory, begin to experience communication challenges noted by repetitive statements, limited discourse, and a deterioration of verbalization (Hux & Dinnes, 2019, p. 93). Thus, the recalling of events is hindered and maintaining conversation becomes difficult; as memory fails, so does the ability to forge relationships and intellectual relevancy. Nevertheless, there is a nexus between the deficit in cognitive ability and the exactness of a photograph. In a nursing facility, an 83-year-old male suffering

from dementia received “technology-based compensatory strategies” to support memory (p. 94). This is precisely the constructive function of a cognitive offloading system like digital photography: “Henry began using the camera on his cell phone to take photographs... Viewing these images served as a reminder of which staff worked with him and the role they each played in his daily care” (p. 94). Maybe the death in photography that Barthes proposes—the ability to document *in* certainty—allows dementia sufferers to have access to something they readily forget and thus the relevance of their memory can appear to be intact. The mundane becomes vital to Henry’s sense of relevancy. In this way, the digital era is essential to his ability to maintain relationships. But photographs remain ambiguous. Certainty is defined insofar as to what was decided to be put before the lens. Yet when sharing images in conjunction with storytelling, dementia patients showed self-expression and were able to fortify relationships (Hux & Dinnes, 2019, p. 97). Perhaps the simple *appearance of truth* may suffice. In *Enlightening Encounters*, Giorgia Alù and Nancy Pedri analyze photography’s effect on Italian literature. They conclude that “the encounter between photography and literary writing opens the door to new representations of life” and enriches literature with a further point of view that transcends textual interpretation (Alù & Pedri, 2015, p. 280). This is similar to “storytelling” by dementia patients where photographs are used with emphasis on authenticity or accuracy; the idea is to be a pastime and encourage relationships (Hux & Dinnes, 2019, p. 96). Recalling events in tandem with photographs greatly extends the ability to perceive. Photographs are tangible evidence that grounds stories and makes them realistic. This appearance is inextricably tied to what is simultaneously obscured. Since the camera cannot reveal what is concealed, it may *appear* to be a self-evident documentation of a moment in time without casting judgment on falsities. It can be selective without being destructive.

CONCLUSION

John Berger reflects that the photograph is a moment preserved, never to be “effaced by the suppression of further moments” (Berger, 1972, p. 49). Perhaps it is not simply a transferring of responsibility to the camera, as cognitive offloading would argue, but rather it is an incessant need to defy limits of the mortality of memory. Thus, if one wanted to return to a memory, they could reflect upon what *was*. It is this notion

of *was* before it becomes what *is* that makes photographs novel. The only knowledge we have of an image is that it took place in some form or another. While this may seem like a defect in photography because it can perpetuate misrepresentations, it is a safety net to those who cannot remember. If one can remember, they understand what it means to forget and to lose and thus understand how photography can eliminate this deficiency. They also recognize the potential for preserving information. However, this capacity for memory may be the distinguishing factor in using photographic preservation for manipulation versus a need to remain functional despite utter confusion. Those with dementia may not remember the pictures, but they know that they happened, and their anxiety can be curtailed. In this case, photography is therapeutic rather than malicious in its manipulation. Perhaps the tendency for photographic exploitation is only relevant insofar as we can recognize what is lost. Once that is taken away, there is no anxiety to use it for how we *want to remember* but in lieu of what we *need* to remember.

Photography began as a novelty, a privilege, and a tool wielded to capture *what was*. But now, since images are created and shared instantaneously, there is no awareness of the philosophical implications but only a need to hoard *what can be lost*, prove what may not exist in actuality, and preserve the idea of potentiality before it succumbs to the arc of time. With smartphones and mass marketed cameras, there is no limit to what can be captured, and everything is photographed with a predictable obsession. It is clear that photography's evidentiary quality can decisively alter our systems of information, inhibit cognition, and memory while empowering habitual obsessions with self-image—in conjunction with social media, the threat is more dire. Yet to truly conceptualize its impact, it is helpful to note how Nicholas Carr, author of *The Shallows: What the Internet is Doing to Our Brains*, describes cognition while online: "Try reading a book while doing a crossword puzzle; that is the intellectual environment of the Internet." He illuminates that "such intensive exercise, when it becomes our primary mode of thought, can impede deep learning and thinking" (Carr, 2010, p. 45). In the context of our argument, this occurs alongside photography, which already reduces our ability of effectively processing information and shortchanges access to deeper cognitive thinking. We are attempting to multitask in a way our brains are not capable of handling and supplement said multitasking with potential photographic misinformation. It is not just reading a book while doing a crossword, it is reading a book and doing a crossword in a foreign lan-

guage, with no reference to accuracy, but with the presumption that it is obviously true. Carr's insight seems to be the final nail in the coffin.

REFERENCES

- Alù, G., & Pedri, N. (Eds.). (2015). *Enlightening Encounters: Photography in Italian Literature*. University of Toronto Press. Retrieved March 24, 2021, from <http://www.jstor.org/stable/10.3138/j.ctt1287px3>
- Annukka K. Lindell (2019) Left cheek poses garner more likes: the effect of pose orientation on Instagram engagement, *Laterality*, 24:5, 600-613, DOI: 10.1080/1357650X.2018.1556278
- Barasch, A., Zauberman, G., & Diehl, K. (2017). How the Intention to Share Can Undermine Enjoyment: Photo-Taking Goals and Evaluation of Experiences. *SSRN Electronic Journal*, 44(6), 1220–1237. <https://doi.org/10.2139/ssrn.3113448>
- Barthes, R. (1980). *Camera Lucida*. (R. Howard, Trans.). New York, NY: Hill and Wang.
- Becker, H. S. (1974). Photography and Sociology. *Studies in Visual Communication*, 1(1), 3–26. <https://repository.upenn.edu/svc/vol1/iss1/3>
- Berger, J. (2002). The Ambiguity of A Photograph. In K. Askew & R. R. Wilk (Eds.), *The Anthropology of Media* (pp. 47–55). Malden, MA: Blackwell.--- (1972). *Ways of Seeing*. London, England: British Broadcasting Company and PenguinBooks.
- Carr, N. G. (2010). *The Shallows: What the Internet is Doing to our Brains*. W.W. Norton & Company.
- Crystal, D. T. , Cuccolo, N. G. , Ibrahim, A. S. , Furnas, H. & Lin, S. J. (2020). Photographic and Video Deepfakes Have Arrived. *Plastic and Reconstructive Surgery*, 145(4), 1079–1086. doi: 10.1097/PRS.0000000000006697.
- Gilbert, S.J., & Risko, E.F. (2016). Cognitive Offloading. *Trends in Cognitive Sciences*. 20(9). 676-688.
- Henkel, L. A. (2014). Point-and-Shoot Memories: The Influence of Taking Photos on Memory for a Museum Tour. *Psychological Science*, 25(2), 396–402. <https://doi.org/10.1177/0956797613504438>
- Hux, K., & Dinnes, C. (2020). Using Digital Photography to Support the Communication of People with Aphasia, Dementia or Cognitive-Communication Deficits. In *Everyday Technologies in Healthcare* (1st ed., pp. 89–107). CRC Press. <https://doi.org/10.1201/9781351032186-6>
- Jun, Y., Meng, R., & Johar, G. V. (2017, June 06). *Perceived social presence reduces fact-checking*. Retrieved October 27, 2018, from <http://www.pnas.org/content/114/23/5976>
- Maxwell, A. (1999). A lens on the other: photographs of non-western peoples by anthropologists and travellers. In *Colonial Photography and Exhibitions*. Leicester: Leicester University Press.
- Mills, J. S., Musto, S., Williams, L., & Tiggemann, M. (2018). “Selfie” harm: Effects on mood and body image in young women. *Body Image*, 27, 86–92. <https://doi.org/10.1016/j.bodyim.2018.08.007>
- Mitchell, A., Gottfried, J., Barthel, M., & Sumida, N. (2018, June 28). *Can Americans Tell Factual From Opinion Statements in the News?* Retrieved November 4, 2018, from <http://www.journalism.org/2018/06/18/distinguishing-between-factual-and-opinion-statements-in-the-news/>

- Pasquali, P. (2020). *Photography in Clinical Medicine*. Springer.
- Pew Research Center. (2021, April 26). *Demographics of Social Media Users and Adoption in the United States*. Pew Research Center: Internet, Science & Tech. <https://www.pewresearch.org/internet/fact-sheet/social-media/>.
- Sheehan, T. (2011). *Doctored: the medicine of photography in nineteenth-century America*. Pennsylvania State University Press.
- Smith, K. (n.d.). *126 Amazing Social Media Statistics and Facts*. Brandwatch. <https://www.brandwatch.com/blog/amazing-social-media-statistics-and-facts/>.
- Soares, J. S., & Storm, B. C. (2018). Forget in a Flash: A Further Investigation of the Photo-Taking-Impairment Effect. *Journal of Applied Research in Memory and Cognition*, 7(1), March, 154-160. doi:<https://doi.org/10.1016/j.jarmac.2017.10.004>
- Sontag, S. (2005). *On Photography*. New York, NY: RosettaBooks.
- Tankovska, H. (n.d.). *Social sharing*. Statista. <https://www.statista.com/topics/2539/social-sharing/>.
- Tariq, S., Jeon, S., & Woo, S.S. (2021). Am I a Real or Fake Celebrity? Measuring Commercial Face Recognition Web APIs under Deepfake Impersonation Attack. *ArXiv*, abs/2103.00847.
- Thomas Allen Harris (Director), Deborah Willis (Producer), Ann Bennett (Producer), Independent Television Service (Producer), Chimpanzee Productions (Producer), National Black Programming Consortium (Producer), (2014). *Through A Lens Darkly: Black Photographers and the Emergence of a People*. New York, NY: First Run Features. [Streaming Video]. Retrieved from https://tubitv.com/movies/593143/through-a-lens-darkly-black-photographers-and-the-emergence-of-a-people?start=true&utm_source=google-feed&tracking=google-feed
- Van Dijck, J. (2008). Digital photography: communication, identity, memory. *Visual Communication*, 7(1), 57-76. <https://doi.org/10.1177/1470357207084865>
- Wallis, B. (1995). Black Bodies, White Science: Louis Agassiz's SlaveDaguerreotypes. *American Art*, 9(2), 39-61. Retrieved from <http://www.jstor.org/stable/3109184>

Divya Pentyala

Sub-Saharan Africa and the Impact of the Gender Gap on Agricultural Productivity

ABSTRACT

Agriculture is a very large sector of employment in sub-Saharan Africa, but productivity in this sector has lagged in comparison to other countries, resulting in a significant increase in food insecurity. This brings up the question of how countries in sub-Saharan Africa can effectively increase their levels of agricultural productivity to reduce food insecurity. There is debate about the importance of the gender gap, with some scholars arguing that it is an important issue in agriculture while others believe in the intensification approach, where the gender gap is ignored and the usage of male farming systems takes over. This paper argues that it is necessary to consider the gender gap, specifically the aspects that result in varying levels of education and differences in land ownership between men and women. Various research studies found that the intensification approach was inconsistent in many countries in Africa. Moreover, the lower levels of education reported by female farmers were associated with a decrease in their likelihood of adopting farm technology. With lower levels of education, women farmers were also less likely to be involved in farm-related decision-making. Furthermore, it was found that women owned less land compared to men and that smaller plots resulted in fewer opportunities to advance and make profits. The research also showed the success of land reallocation in reducing land ownership inequality between men and women as it resulted in higher agricultural yields. From this, it can be concluded that the intensification approach is not entirely effective and that instead, it is more advantageous to increase women's education and land ownership in sub-Saharan Africa to increase productivity.

INTRODUCTION

Agriculture is a significant source of economic activity for countries in sub-Saharan Africa. This sector is the source of employment for approximately two-thirds of the continent's population and "contributes an average of 30 to 60 percent of gross domestic product" (Dickson

et al., 2020). However, in terms of agricultural productivity, Africa has consistently been reporting lower levels than the rest of the developing world (Bjornlund et al., 2020). This is an issue as low levels of agricultural productivity result in a higher prevalence of food insecurity. In fact, the number of food insecure individuals in sub-Saharan Africa has increased “from 176 million in 1990-1992 to 220 million in 2014-2016” (Wambogo et al., 2018, p. 1). The number of undernourished and food insecure individuals has increased even more by 2020 to approximately 264.2 million people (“Hunger Relief,” n.d.). This means that between 1990 and 2020, the food insecure population has increased by approximately 88 million people. This is plausible as sub-Saharan Africa has the highest prevalence of undernourishment of all regions in the world with approximately 24.1% of its population experiencing food insecurity as of 2020 (“Hunger Relief,” n.d.).

Why exactly are countries in sub-Saharan Africa reporting lower levels of agricultural productivity? Many scholars claim that the gender gap in the agriculture sector of these countries is to blame for the low yields. Women provide “more than two thirds of the workforce in agriculture” and “contribute between 40 and 65% of all hours spent in agricultural production and processing [...]” but men exert dominance over the decision-making aspect of farm production (Enete & Amusa, 2010, p. 1). This male dominance stems from the practice of social and gender norms in sub-Saharan Africa. In fact, a study on cocoa farm households noted that various societal constraints prevented women from contributing to decision-making including “socio-personal constraints such as misconceptions that women farmers do not have farming ideas,” and that “women are supposed to be subordinates to men in farming” (Enete & Amusa, 2010, p. 5). Despite women making up a significant portion of the agricultural labor force, the strict enforcement of social norms prevents women from fully being involved in farm production. These societal constraints impact other aspects of women’s lives as well, including their level of education and rights to land ownership. Lower levels of education result in women having lower bargaining power as they have limited access to knowledge (Tayal, 2019, p. 202). Furthermore, even if women own land, they are still unable to exercise full power and control over that land because they only have secondary land rights which restrict ownership access to males, ultimately forcing women to rely on their male family members for permission to manage the land (Nadasen, 2020, p. 43). These societal constraints and norms ultimately reduce women’s ability

to produce equally high agricultural yields compared to men, essentially reducing their levels of productivity. On the other hand, scholars Gladwin and McMillan (1989) and Nindi (1993) insist that there is another way to increase productivity without addressing gender disparity or involving women: agricultural intensification, a method which increases the concentration of outputs by implementing farm technology and consequently reducing the need for women in the field. Considering the two sides of the debate, the following question must be asked: how can countries in sub-Saharan Africa effectively increase their levels of agricultural productivity? This paper will focus on the way that levels of agricultural productivity in sub-Saharan Africa relate to the issue of food insecurity and how improving the conditions of female farmers can help countries produce larger yields.

In the first section titled “The Intensification Approach,” I will discuss the two sides of the debate. Exploring the arguments of Nindi (1993), Gladwin and McMillan (1989), it provides a counter argument regarding the effectiveness of agricultural intensification. Additionally, the arguments of Binswanger-Mkhize and Savastano (2017) will demonstrate why the intensification approach is ultimately unreliable and ineffective at increasing productivity. In the section titled, “Lack of Higher Education for Women,” I will draw on the research of Watkins (2013) and Delprato et al. (2016) to show how social norms are aimed at benefiting men. Afterwards, incorporating data from the research of Joe-Nkamuke et al. (2019), Enete and Amusa (2010), and Ntshangase et al. (2018) illustrates the disparity in education in sub-Saharan Africa. Analyzing the arguments of Enete and Amusa (2010) and Tayal (2019), both show how improving the quality of women’s education can effectively improve agricultural productivity. In the section titled, “Disparity in Land Ownership,” the research of Nadasen (2012) and Gray and Kevane (1999) are used to explain how social norms prevent women from owning land on an equal scale to men. The studies of Doss et al. (2017) and the data of the Food and Agriculture Organization (2018), draws an illustration of the disparity in land ownership between men and women. Finally, I will analyze the findings of Restuccia & Santaaulàlia-Llopis (2017) to show how the reallocation of land in sub-Saharan Africa could be effective in improving agricultural productivity.

THE INTENSIFICATION APPROACH

There is much debate regarding the importance of female farmers in the agriculture of sub-Saharan Africa, and whether it is possible to improve agricultural productivity without helping them. The scholars who agree that this is possible support their claim with the idea of agricultural intensification, a method that increases the concentration of outputs for a certain number of inputs. These scholars insist that it is unnecessary to improve the conditions of female farmers in order to increase agricultural yields. Gladwin and McMillan (1989) explain the intensification approach and say that “female farming systems can predominate in societies with low population densities and an ample land/person ratio [...] Population pressure, however, causes shortening of the fallow cycle and the introduction of the plow. The plow, in turn, leads to an increase in male farming systems” (p. 348). Essentially, agricultural intensification would be used in areas with high population densities and would result in the use of the plow, a form of farm technology. The use of male farming systems would therefore increase because men are more likely than women to operate machinery, such as the plow.

Continuing with the arguments of Gladwin and McMillan, Nindi (1993) claims that men take over the operation of farm technology because “there is a masculine advantage for strenuous activities, and a feminine advantage for activities that are compatible with child care” and the “latter tasks are normally not dangerous, and do not need distant travel, and are interruptible” (pp. 145-146). Essentially, men are better-suited for physical activities, such as operating a plow, and women are better-suited for and are generally busy with child-care and domestic responsibilities, so men increasingly take over the operation of farm technology and the beginning of the production process. Women may also lack the knowledge or level of education necessary to know how to operate large technology like the plow. If agricultural intensification becomes a regular practice, the use of farm technology would increase, and men would be needed more on the farm than women.

These scholars are correct in that agricultural intensification is a potentially effective method to increase agricultural productivity in sub-Saharan Africa. It is also important to note that the effects of using this method of intensification would be unequal across the entire continent because each country has a different population. The scholars also claim that agricultural intensification would work effectively in areas with

high populations, but a study that looked at the status of Malawi, Ethiopia, Nigeria, Niger, Tanzania, and Uganda after implementing the approach found that the method produced meager results. The study, which looked at the outcome of using the intensification approach in six African countries, utilized the Boserup-Ruthenberg (BR) model of intensification, which, similar to Gladwin and McMillan (1989) and Nindi (1993), suggests that as population density increases, the need for farm technology increases, too, and becomes the predominant method of increasing yields. According to the results of the study however, this has not been the case as “the descriptive analysis suggests that the BR impacts of population pressure and market access have triggered an inadequate response of the farming systems with respect to irrigation and technology use” (Binswanger-Mkhize & Savastano, 2017, p. 39). If the approach was successful in at least one country, it would be difficult to argue against the effectiveness of it. Despite the increasing pressure of population growth in these countries, it has not been necessary to intensively use farm technology to increase agricultural yields in any of the six countries, which insinuates that the intensification approach is not broadly useful. Though proponents of the approach have claimed that their method would be ideal in cases of high populations, the approach did not meet adequate standards in these parts of sub-Saharan Africa.

LACK OF HIGHER EDUCATION FOR WOMEN

Although the intensification approach is not widely applicable, there remains another approach which may be effective for increasing agricultural productivity in sub-Saharan Africa and it starts with closing the gender gap between men and women in this sector. To do this, it could be useful to address women’s lower level of education, which impacts their ability to make decisions and reduces their likelihood of adopting the farm technology that could make their work more efficient. The lack of comparable education for women ultimately has a negative effect on their level of agricultural productivity. Women have lesser access to education in sub-Saharan Africa because the social norms not only prioritize men’s education over women’s education, but women are meant to prioritize their domestic responsibilities over their education too. For instance, “young girls are removed from school to collect water or care for their siblings” (Watkins, 2013, para. 23). Boys, on the other hand, are able to enjoy an interruption-free education. Another practice that disproport-

tionately affects girls to the detriment of their education is child marriage. When girls are married off, they are forced to give up their education as it is seen “in some settings as incompatible with the responsibilities and expectations of marriage” (Delprato et al., 2016, p. 176). After marriage, men gain control of various aspects of their wives’ lives, another example of the social norms giving more power to men. Furthermore, the fact that women are expected to sacrifice their education and men are not is illustrative of society’s prioritization of men’s education over women’s and the rights which men have but are denied to women. Based on this, it is very likely that deviating from the practice of these gender norms by placing equal value upon women can positively affect their levels of education and chances for success.

The disparity in level of education between men and women in sub-Saharan Africa impacts farmers’ likelihood of adopting technology. Sub-Saharan Africa “not only exhibits the lowest level of education worldwide but also the highest degree of schooling inequality in favor of boys” (Baten et al., 2021, p. 814). In Nigeria specifically, of the 63% of women who had a formal education, the majority, 44%, “only attended primary school, 17% attended secondary school, while only 2% attended higher institutions” (Enete & Amusa, 2010, p. 3). It can be seen here that a very small percentage of women obtain an education beyond primary school. This is significant to note because individuals with higher education are more likely to adopt farm technology as they are able to build a stronger understanding of its usage. In fact, a study on the adoption of no-till conservation agriculture (CA) technology by small-scale farmers in South Africa found that those who adopted the technology “had a higher mean education level (3.7) compared to non-adopters (2.6)” and that an extra year “of education attained by the farmer is associated with the log odds of adopting no-till CA (versus non adoption) increasing by about 1.2 (odds ratio = 1.214) times” (Ntshangase et al., 2018, pp. 9- 12). Based on this, it is evident that education is a significant variable when it comes to farm technology; with more education, farmers are more likely to incorporate farm technology into their work ethic, increasing their efficiency. Based on the first statistic, it is apparent that women are significantly less educated than men, which means that they are also less likely to adopt farm technology than men. If the disparity in the level of education between men and women is reduced, it could increase the likelihood of women farmers adopting farm technology, such as no-till CA, which would help them save time and produce higher yields, ultimately improv-

ing their levels of agricultural productivity.

A lower level of education results in a smaller range of knowledge and a narrower set of skills. Through education, men and women acquire important information regarding crop production, farm technology, and methods of efficiency. If women lack proper information about farm production, they are less likely to be involved in farm-related decision-making. This is shown through a study on cocoa farms that determined the factors that affect a woman's involvement in decision making. The study found that women's illiteracy and lack of knowledge about modern farming methods were two of the largest variables impacting a female farmer's involvement in farm decision making (Enete & Amusa, 2010, p. 5). Therefore, it can be concluded that a woman's level of education is positively correlated with her involvement in decision-making. With lower education, female farmers are especially likely to be considered incapable of making important farm decisions. It is evident that a woman's education is closely tied with her levels of agricultural productivity, so it is worthwhile to improve women's levels of education in order to increase women's productivity in farming. A study by the World Bank found that "if women were to obtain the same levels of education, experience, and farm inputs than that the average male farmer currently enjoys, the productivity of women would fully catch-up to that of men and in some cases even surpass it" (Conceição et al, 2016, p. 7). If women's levels of productivity can be maximized through higher education, then it is necessary to eliminate the factors that inhibit women's access to education. Doing so not only has the power to increase women's agricultural productivity, but it can also push their levels past those of men. Hence, it is safe to conclude that equalizing education between men and women has the ability to improve women's ability to make smart farm decisions, which may include the decision to utilize farm technology, ultimately increasing their agricultural yields.

DISPARITY IN LAND OWNERSHIP

Beyond education, it is also necessary to resolve the issue of the disparity in land ownership between men and women; this can be done through the idea of land reallocation, which could increase and equalize women's access to farm resources, ultimately increasing agricultural productivity. Societal restrictions have prevented women from owning land on an equal scale to men in sub-Saharan Africa as seen through

land tenure systems, which are systems that oversee land ownership and control. These tenure systems “remain the prevalent form of rural land tenure in sub-Saharan Africa and are deeply steeped in patriarchal practices” (Nadasen, 2012, p. 43). In other words, the use of these systems to determine land ownership provides men with an advantage and allows them to dominate. Furthermore, women’s ability to exercise power over land is heavily dependent upon their male family members. A study by Gray and Kevane (1999) sought to determine what factors heavily influence a woman’s ability to control land. The study found that their rights are contingent upon marital status as “a woman’s rights may increase with the length of marriage or with more children [...] Rights may end with divorce, with widowhood, with failure to have sons” (p. 18). Essentially, women are able to exercise their rights more if they are married longer or if they have more children, but their rights may also be stripped from them if they do not deliver sons or if they get divorced. Their rights may rest entirely upon whether or not they meet their husbands’ and families’ expectations, which demonstrates how social norms are geared towards benefitting men and how they play a large role in deciding women’s rights.

Even if women own land, they own significantly less than men, which results in women having fewer resources to work with, ultimately inhibiting their ability to produce high agricultural yields. Land is one of the basic necessities for farm production, and, in terms of sole ownership, men own a greater proportion of land across sub-Saharan Africa than women; even in cases of joint ownership, “it should not be assumed that joint ownership necessarily provides equal rights over land; men often have more rights over the land than their wives” (Doss et al., 2017, p. 71). The difference in the percentage of land owned by men and women is significant, especially when considering sole ownership; there is greater inequality with sole ownership than with joint ownership. In Burundi, for instance, approximately 50% of all men have sole ownership of land while only about 10% of all women have sole ownership (FAO, 2018). However, when looking at land ownership in general, sole or joint, about 60% of all men and approximately 52% of all women own land in Burundi (FAO, 2018). This insinuates that joint ownership is simply a façade; though over 50% of women in Burundi own land, only about 10% of these women have sole ownership, suggesting that even among the majority of women who do own land, approximately 40% of these women still do not have full ownership rights over their land because of joint ownership. Seeing

this, it is evident that underneath the “joint ownership” façade, there is significant inequality with regards to land ownership and access to land. Increasing women’s access to land and equalizing ownership through efficient reallocation could positively affect agricultural productivity and increase food security in sub-Saharan Africa. Without equal access to land, women are automatically at a disadvantage when it comes to producing high yields as they have less space to farm on. When given less farm resources to begin with in comparison to male farmers, women are essentially being systematically set up to produce lower yields and make lower profits, which is counterproductive to countries trying to maximize productivity levels. For reference, in Ethiopia, it was found that these female-headed households that often already had smaller areas of farmland “received 10 percent fewer visits from agricultural extension agents and 12 percent fewer visits by development agents than male-headed households” (“Fact Sheet,” 2016). This means that because female farmers were given access to smaller plots, they were unable to be as successful as male farmers who had larger plots; women were less likely to be presented with opportunities to improve their yields compared to male farmers. A possible solution to address this issue is equal and proper land reallocation among male and female farmers. Reallocating land effectively increases agricultural productivity as the land is used more efficiently. When land was reallocated to be more efficient and accessible in Malawi, “Malawi would increase its agricultural output (productivity) by 260 percent. Gains from efficiently redistributing land use in Malawi are five times larger than those obtained from the efficient redistribution of capital in manufacturing in China and India” (Restuccia & Santaaulàlia-Llopis, 2017, para. 7). Malawi found success in improving its agricultural productivity through the proper reallocation of land; agricultural yields increased significantly when land was redistributed compared to when it was allocated inefficiently, which shows that it is effective and useful to equalize land ownership between men and women. Seeing the success of the reallocation approach, it can be concluded that it is worthwhile to implement this technique in the rest of sub-Saharan Africa.

CONCLUSION

In order to effectively improve productivity in sub-Saharan Africa, it is imperative to address the gender gap in agriculture despite scholars’ idea of agricultural intensification. Seeing how the intensifica-

tion method resulted in the six African countries that were studied, it is safe to say that the approach is unreliable. Furthermore, women make up a very large portion of the agricultural labor force and make significant contributions to overall farm yields, so it may not be entirely effective to completely displace them. Recognizing the gender gap as an obstacle to producing high agricultural yields is simply the first step to resolving it. It is also necessary to reduce society's practice of social norms, specifically gender norms, as these disproportionately benefit male farmers over female farmers; these gender norms leave female farmers at a disadvantage when it comes to education and land ownership. Women are expected to prioritize their domestic duties before their education, unlike men. Therefore, they have reported lower levels of education, which means they are less likely to adopt farm technology and be involved in farm decision-making, both of which are factors that impact productivity levels. Moreover, social norms also end up affecting female farmers' land ownership rights. Women own significantly less land compared to men, meaning they have access to fewer farm resources, which impacts their productivity levels. It would be in sub-Saharan Africa's best interest to ban the practice of gender norms, reallocate farming land to equalize ownership between men and women, and increase women's education levels to effectively increase agricultural yields. While more research needs to be done regarding other options for increasing productivity, there is evidence showcasing the success of increased education among women and land reallocation in improving levels of agricultural productivity in different parts of Africa, insinuating that it is worthwhile to explore and implement these changes to move towards a more food secure future.

REFERENCES

- Action Against Hunger (n.d.). Hunger relief in Africa. <https://www.actionagainsthunger.org/africa-hunger-relief-facts-charity-aid>
- Binswanger-Mkhize, H.P., & Savastano, S. (2017). Agricultural intensification: The status in six African countries. *Food Policy*, 67, 26-40. <https://dx.doi.org/10.1016/j.foodpol.2016.09.021>
- Bjornlund, V., Bjornlund, H., & Van Rooyen, A.F. (2020). Why agricultural production in sub Saharan Africa remains low compared to the rest of the world – a historical perspective. *International Journal of Water Resources Development*, 36, 20-53. <https://doi.org/10.1080/07900627.2020.1739512>
- Conceição, P., Levine, S., Lipton, M., & Warren-Rodríguez, A. (2016). Toward a food secure future: Ensuring food security for sustainable human development in sub-Saharan Africa. *Food Policy*, 60, 1-9. <https://dx.doi.org/10.1016/j.foodpol.2016.02.003>

- Delprato, M., Akyeampong, K., & Dunne, M. (2017). Intergenerational education effects of early marriage in sub-Saharan Africa. *World Development*, 91, 173-192. <https://doi.org/10.1016/j.worlddev.2016.11.010>
- Dickson, K.B, Middleton, J.F.M., Clarke, J.I., Gardiner, R.K.A., Kröner, A., Mabogunje, A.L., McMaster, D.N., Nicol, D.S.H.W., Smedley, A., & Steel, R.W. (2020). "Africa: Agriculture." *Encyclopedia Britannica*. <https://www.britannica.com/place/Africa/Agriculture>
- Doss, C., Meinzen-Dick, R., Quisumbing, A., & Theis, S. (2017). Women in agriculture: Four myths. *Global Food Security*, 16, 69-74. <https://dx.doi.org/10.1016/j.gfs.2017.10.001>
- Enete, A.A., & Amusa, T.A. (2010). Determinants of women's contribution to farming decisions in cocoa based agroforestry households of Ekiti State, Nigeria. *Field Actions Science Reports*, 4, 1-6. <http://journals.openedition.org/factsreports/396>
- Fact sheet: Land tenure and women's empowerment. (2016). USAID. <https://www.land-links.org/issue-brief/fact-sheet-land-tenure-womens-empowerment/>
- FAO. (2018). The gender gap in land rights. <http://www.fao.org/3/I8796EN/i8796en.pdf>
- Gladwin, C.H., & McMillan, D. (1989). Is a turnaround in Africa possible without helping African women to farm? *Economic Development and Cultural Change*, 37(2), 345-369. <https://doi.org/10.1086/451726>
- Gray, L., & Kevane, M. (1999). Diminished access, diverted exclusion: women and land tenure in sub-Saharan Africa. *African Studies Review*, 42(2), 15-39. <https://doi.org/10.2307/525363>
- Joe-Nkamuke, U., Olagunju, K.O., Njuguna-Mungai, E., & Mausch, K. (2019). Is there any gender gap in the production of legumes in Malawi? Evidence from the Oaxaca-Blinder decomposition model. *Review of Agricultural, Food, and Environmental Studies*, 100, 69-92. <https://doi.org/10.1007/s41130-019-00090-y>
- Nadasen, N. (2012). Rural women's access to land in sub-Saharan Africa and implications for meeting the Millennium Development Goals. *Empowering Women for Gender Equity*, 26(1), 41-53. <http://www.jstor.org/stable/23287230>
- Nindi, B. (1993). Agricultural transformation in sub-Saharan Africa: The search for viable options. *Nordic Journal of African Studies*, 2(2), 142-158. <http://www.njas.helsinki.fi/pdf-files/vol2num2/nindi.pdf>
- Ntshangase, N.L., Muroyiwa, B., & Sibanda, M. (2018). Farmer's perceptions and factors influencing the adoption of no-till conservation agriculture by small-scale farmers in Zashuke, KwaZulu-Natal province. *Sustainability*, 10(2), 1-16. <https://doi.org/10.3390/su10020555>
- Baten, J., De Haas, M., Kempter, E., & zu Selhausen, F.M. (2021). Educational Gender Inequality in Sub-Saharan Africa: A Long-Term Perspective. *Population and Development Review*, 47(3), 813-849. <https://doi.org/10.1111/padr.12430>
- Restuccia, D., & Santaaulàlia-Llopis, R. (2017). How inefficient land allocation in Malawi is severely depressing agricultural productivity. *International Growth Centre*. <https://www.theigc.org/blog/inefficient-land-allocation-malawi-severely-depressing-agricultural-productivity/>
- Tayal, D. (2019). Gender inequality, reproductive rights and food insecurity in sub-Saharan Africa – A panel data study. *International Journal of Development Issues*, 18(2), 191- 208. <https://doi.org/10.1108/IJDI-10-2018-0165>
- Wambogo, E.A., Ghattas, H., Leonard, K.L., & Sahyoun, N.R. (2018). Validity of the food insecurity experience scale for use in sub-Saharan Africa and characteristics of food insecure individuals. *Current Developments in Nutrition*, 2(9), 1-10. <https://doi.org/10.1093/cdn/nzy062>

Watkins, K. (2013). Too little access, not enough learning: Africa's twin deficit in education. <https://www.brookings.edu/opinions/too-little-access-not-enough-learning-africas-twin-deficit-in-education/>

Meryem Kalebek

Racial Disparities in Prenatal Healthcare

ABSTRACT

Black women bear the burden of numerous risks related to their reproductive health. Historically, their reproductive rights were taken advantage of through experimental and exploitative means during the period of slavery. The persistence of racially biased laws restricted Black Americans from equal opportunities of education, income, living environments, and healthcare. Elucidated by Critical Race Theory, structural racism limits Black Americans' social determinants of health and negatively affects their overall mental and physical wellbeing. In Black mothers, experiencing unequal distribution of resources under the basis of race increases their risk of disease. When Black Americans are in need of medical treatment, the historical racial bias within the healthcare system presents itself today through unequal quality of medical care. Using the Obstetric Racism Framework, it becomes evident that Black mothers are dramatically more likely to face adverse maternal health outcomes, such as premature birth; maternal sickness and death; and racism from health professionals during medical encounters. This research essay discusses the history behind racial disparities and how they negatively affect the maternal health outcomes of Black mothers today.

INTRODUCTION

The majority of modern-day society is aware of the explicit racism that exists throughout the world, especially in the United States. With empowering movements taking charge, like recent media explosions of the Black Lives Matter movement bringing light to racist acts embedded within law enforcement, society is gaining more exposure to the persistent structural racism that perpetuates racial inequity throughout the nation. Structural racism within the US promotes the unfair treatment of Black Americans, especially the health of Black mothers and their children. Within the healthcare industry, the ongoing racial disparities that promote unequal distribution of care and medical resources affect the treatments of Black mothers solely based on their race. Historically, structural racism within the healthcare industry began during the period of

slavery, and the systematic functionality of the US reinforces racial bias. This bias solidifies disparities to negatively affect the quality of medical treatment for Black mothers, causing them to struggle with discrimination; increased rates of morbidity; and greater risks of mother and infant mortality. Under disadvantaged social determinants faced by Black mothers, they face this greater risk of morbidity, or the suffering of a disease, as well as mortality, or death, under unfair medical treatment rooted in racial bias. Today, “Black women in the United States are 1-3 times more likely than white women to die from pregnancy-related complications and are more likely to have a preventable death” (Jain et al. 9), which illustrates the deadly effects of racial disparities on the quality of care in the healthcare system.

The Aspen Institute defines structural racism as “A system in which public policies, institutional practices, cultural representations, and other norms work in various, often reinforcing ways to perpetuate racial group inequity” (Institute Staff). The Aspen Institute’s definition draws upon the ideologies of Critical Race Theory (CRT), a viewpoint that states the law and legal institutions are inherently racist due to privileged White Americans taking advantage of the social construct of race for economic and political interests at the expense of people of color. As a result, racial inequality persists as White people create social, economic, and legal differences to maintain elite White interests through the oppression and exploitation of minorities. A historical understanding of CRT claims the advantages White people maintain over people of color are rooted in the past. Historical oppression thus leads to the ongoing presence of structural racism that is embedded through laws within society that causes discrimination within organizations like employment, housing, education, and healthcare. The Obstetric Racism Framework is a specific advancement of CRT. The Obstetric Racism Framework was formulated by Dána-Ain Davis, and “...[highlights] forms of violence and abuse that medical personnel and institutions routinely perpetrate against Black women during conception, pregnancy, childbirth, and post partum [sic]” (Davis 57). This framework connects complex factors that link race, social determinants, prenatal care, and maternal morbidity and mortality. Therefore, in comparison, Obstetric Racism and its focus on racial politics within pregnancy, labor, and birth is a subset and causation under the Critical Race Theory, where the political power of White privileged Americans oppress Black Americans in general, and cause them to face disadvantaged social, economic, and physical qualities of life.

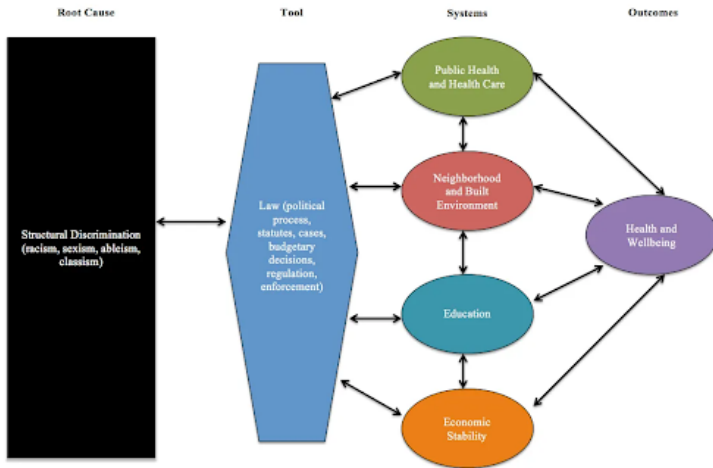
Racial disparities persist under systemic racism, as portrayed by the ideologies of Critical Race Theory. My research question follows: how do racial disparities affect the quality of healthcare treatment mothers receive in a pre- and postnatal hospital setting? In the first section, *Onset of Structural Racism*, I will discuss the history behind modern day racial disparities within the healthcare system through the experimentation on enslaved mothers as well as the history behind structural racism and how its effects on social determinants of health cause increased health risks for Black mothers. My second section, *Healthcare Discrimination Against Black Mothers*, highlights the detrimental effects of healthcare discrimination that disregards the medical needs of Black mothers, harming their wellbeing. The third section, *Black Mothers Face Increased Morbidity and Mortality Rates*, will provide evidence of the causation of increased morbidity and mortality rates of Black mothers and their infants as a result of the perpetuation of racism, and how the utilization of CRT in health practices decreases these rates to prove the continuity of racial disparities in medicine. My research will analyze the relationships between the historical context behind racism, experiences of healthcare discrimination, and the Black morbidity and mortality rates under CRT to illustrate its connection to the problem of modern day racial disparities harming the quality of natal healthcare for Black mothers.

ONSET OF STRUCTURAL RACISM IN HEALTHCARE

The racial disparities embedded within the healthcare system are caused by an “unconscious bias” against Black women created during the period of slavery. As Black people were granted no rights under US law, enslaved women had no control over their bodies. As a result, slaveholders relied on hired physicians to promote the reproduction and fertility of enslaved women. The healthcare industry began by abusing the reproductive autonomy of Black mothers for the sole purpose to “increase profits anywhere from five to six percent” for slave owners and physicians alike (Taylor 507). This occurred after “both Britain and the United States banned the transatlantic slave trade in 1807-1808, cutting off the sources of African captives”, chattel slavery and its legal permittance of slave owners also owning their slaves’ children greatly increased forceful slave-breeding (Owens 1343). Black women were not seen as human beings, but rather as sources of income as they were stripped of their bodily autonomy. Slave masters and physicians disregarded the prenatal medical

needs of enslaved mothers, as many gave birth in unsanitary conditions, and the majority experienced the death of their infants or mortality themselves. Doctors were hired to examine the enslaved and determine their market value, ultimately “medicalizing blackness... to expand their scientific knowledge and build their professional reputations” (Owens 1342-3). Therefore, the healthcare industry during this period relied heavily on taking advantage of Black bodies for monetary or experimental gain. For example, performing torturous surgeries and tests on enslaved women “proved to help advance the study of gynecology and subsequently heal white women of their reproductive injuries and illnesses” (Taylor 509). The view of Black women as variables in experiments for the benefit of White slave owners and physicians justified the torture they went through in order to better the health of White women. This laid the groundwork for the unconscious bias and racism against Black mothers present in the healthcare system today, where the need of care of White women is different to the need of care of Black women.

Despite abolishing slavery in 1865, the segregation of White and Black Americans during the Jim Crow era of 1877 to 1954 continued White elitist Americans exploiting Black, recently freed Americans who were not given the same opportunities for work, a home, or stable income. As referenced by Ruqaiyah Yearby in her journal article “Racial Disparities in Health Status and Access to Healthcare,” the National Housing Act of 1934 prevented Black Americans from obtaining a mortgage for a home, in an act of discrimination referred to as “redlining.” Redlining created ghettos that were predominantly Black and suburbs that were predominantly White. This resulted in the uneven distribution of income seen today between White and Black Americans, where “...structural racism provided Caucasians, the dominant group, with support and money to obtain net worth and wealth through home ownership, while preventing African Americans, the non-dominant group, from obtaining net worth and wealth through homeownership” (Yearby, “Racial Disparities” 1115). Though the Civil Rights Acts and Voting Act of 1965 provided equal legal rights, these laws never changed the structures of the US that prevent Black Americans from equal access to resources like wealth, employment, income, and healthcare, hence the reason for structural racism causing racial disparities in the present day.



Revised SDOH Framework created by Ruqaiyah Yearby (2020)

(Figure 1) Critical Race Theory: U.S. law is inherently racist insofar as it functions to create and maintain social, economic, and political inequalities between White and Black Americans, causing dramatic health disparities (Yearby, “Structural Racism”).

Critical Race Theory, defined by Black Americans’ mistreatment from the beginning of US history, has shaped our understanding of today’s structural racism, which stems off into unequal distribution of resources, and ultimately harms the health of Black Americans. Under the healthcare system, Black mothers are faced with racial disparities regarding their maternal health due to not having equal access to food, education, safety, and income stability under legal institutions embedded with racial bias (Figure 1). Due to structural racism within employment, wealth, and income, Black Americans lack stable jobs or high-paying salaries. Many are unable to obtain college degrees, therefore limiting financial stability for Black Americans and “because healthcare in the United States is distributed based on ability to pay, African Americans’ access to healthcare is also limited... which provides resources for individuals to purchase health insurance” (Yearby, “Racial Disparities” 1121). In other words, the burdens of persistent structural racism limit opportunities for Black Americans to live at an equal standard to White counterparts, like obtaining a high-paying job for financial stability to afford health insurance and maternal care. The effects of race on one’s social standing, according to CRT, stem from the history of taking advantage of Black Americans under structural racism. The overlying pressures faced by Black mothers increase morbidity and ultimately increase the risk of

mortality under structural racism, whose effects on their livelihood are the result of it being historically embedded within the healthcare system itself.

HEALTHCARE DISCRIMINATION AGAINST BLACK MOTHERS

Healthcare personnel often carry an unconscious bias against Black mothers in need of medical care, where healthcare workers undermine the pain of their Black patients. Critical Race Theory illustrates how the healthcare industry promotes unjust treatment against Black women by implementing structural racism within the laws of healthcare organizations, induced through the history of physicians and their exploitation of Black bodies. The legal precedent for this exploitation can be seen in the 1963 case of *Simkins v. Moses H. Cone Memorial Hospital*, where “a group of African American physicians, dentists, and patients filed a lawsuit against two hospitals in North Carolina receiving federal funding because the hospitals denied admission to African Americans on the basis of race” (Yearby, “Racial Disparities” 1133). Black mothers continue to face discrimination from healthcare staff due to these historical ties between racism and healthcare institutions, in line the Obstetric Racism Framework where Black women endure greater health risks during their need of prenatal care due to the racial bias embedded within the system. For example, according to Deirdre C. Owens and Sharla C. Fett in the *American Journal of Public Health*, “Black pregnant women... are told their fatness, advanced age, dietary choices, and lack of prenatal care have increased their chances of dying during childbirth. Yet, whereas Black pregnant people and mothers are made into culprits and the initiators of their deaths, doctors, nurses, and the hospitals they run are not looked at as critically as they should be” (Owens and Fett 1343). Today, doctors continue to blame Black mothers for their risk of maternal mortality rather than understanding the racial disparities that cause these increased maternal morbidity rates in the first place. Medical professionals are not scrutinized under CRT, as doctors still fail to understand the inherently racist structure of the healthcare system they work for. Medical professionals fail to account for how their authoritative profession maintains the mistreatment of Black women through the doctors’ dismissal of the health concerns of high-risk Black mothers. Reported in the results of a survey, *Listening to Mothers*, one in ten women in California hospitals

reported disrespectful treatment by hospital personnel, including “rough handling,” but were “...ignored after expressing fears and/or concerns.” The aforementioned “unfair treatment” was more commonly reported by Black women than by White or Latina women (Taylor 511). This statistical insight was gained directly from Black mothers based on their birthing experiences, and supports how physicians enforce their unconscious bias against Black women as a result of the persistence of systemic racism in healthcare.

Another example of racial unconscious bias from medical professionals was seen through a Black woman named Ella’s story, which was shared by author Dána-Ain Davis. Ella experienced medical abuse from two fertility specialists while trying to conceive. Her first fertility specialist performed hormone experimentation that she was unaware of, resulting in intense depression and anxiety. From her second specialist, the doctor brokered her desire to become pregnant by having Ella pay for someone else’s eggs through her insurance in exchange for her eggs (Davis 61). Ella’s case is related to the persistence of experimentation on Black mothers from periods of slavery to the modern day, benefitting White accessibility and wealth under the Obstetric Framework as Ella’s fertility was toyed with. Not only were Ella’s wishes ignored, but her pain and need of care were brushed aside as Ella’s specialists focused on someone else’s eggs over her own. Jamila Taylor links this to the “obstetrical and gynecological hardiness of Black women, which is a false belief that has been passed down over decades and conditioned how pregnant Black women are treated in health care...” (Taylor 512). This false perception of Black women being “tough,” fueled by the racial bias of healthcare personnel, invalidates their pain. As the “invisibility” (512) of Black mothers leads to healthcare professionals ignoring their expressions of pain and discomfort, Black mothers are left helpless in gaining proper medical care due to the historical persistence of oppression surrounding their daily environments.

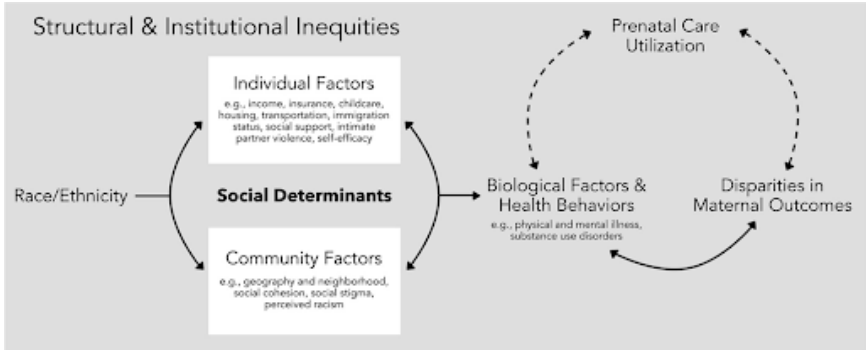
WHY BLACK MOTHERS FACE INCREASED MORBIDITY AND MORTALITY RATES & HOW TO LESSEN THEM

Improper medical care puts Black mothers at greater health risks, including maternal mortality due to their poor social determinants. Generally, “in 2005, the death rate for white women was 11.7 per 100,000 live

births... and 39.2 for non-Hispanic black women” (Bryant 5). This dramatic Black-White maternal mortality gap is due to the structural racism that increases Black women’s chances of illness. According to a study by Judette Louis et al., “Further state levels analyses indicated that states with a poverty rate exceeding 18%... had 77%... [of an] increased risk of maternal mortality... compared with states with lower rates of poverty” (Louis et al. 691). This quote provides further statistical evidence that supports the persistence of structural racism and how the unequal opportunities stemming from it cause Black Americans to be more likely to struggle with maintaining their social determinants of health. These disadvantaged determinants, as shown by the quote, prove to harm the health of Black mothers who face these struggles. The statistical evidence on how poor social determinants increase the rates of maternal morbidity and mortality explains the causation behind the dramatic differing rates between maternal mortality in Black women compared to White women. CRT portrays how structural racism lessens opportunities and overall wellness for Black Americans, and the structural racism within the healthcare system induces medical violence and disregard for the Black women falling victim to the health risks that are out of their control. This cycle continues through Black women’s children. According to Jacob Orchard and Joseph Price’s analysis of infant health discrepancies at the county level, “racial gaps in infant health are especially critical since adverse birth outcomes place individuals at greater risk for other negative health conditions later in life... and individuals with better birth outcomes give birth to healthier offspring when they themselves are mothers” (Orchard and Price 192). Ultimately, racial prejudice within hospitals that harm the health of Black mothers inherently harms the wellbeing of the infant, who will hold these health issues for their lifetime as well. As structural racism persists, the Black-White gap of maternal mortality, morbidity, and birth defects will in turn continue, creating an ongoing cycle of increasing racial gaps due to the persistence of structural inequities.

As a result of the historical trends of structural racism, Black women are forced to spend their livelihood in usually poor environments that negatively affects their overall health. Healthy People 2020, a public health initiative from the Office of Disease Prevention and Health Promotion, defines the social determinants of health as “the conditions in which we are born, live, learn, work, play, worship, and age” (Gadson et al. 310). Therefore, in comparison to where White women live, the areas Black women live in tend to be poorer, more dangerous areas without

equal job opportunities. Black mothers work hard to balance the struggles of maintaining a proper income, experiencing racism, and working tiring jobs. As a result of increased stressors by racial discrimination in social organizations, they are more likely to experience sickness or disease that may negatively affect their maternal outcome.



(Figure 2) Social determinants of health harmed under the basis of racial bias within US institutions lead to greater health risks (Gadson et al. 309).

The Obstetric Racism Framework portrays how CRT’s ideologies of structural racism negatively affecting Black social determinants of health specifically harm Black mothers in terms of increased risks of diseases and worsened prenatal care, which causes increased disparities within Black maternal outcomes (Figure 2). For example, per Ruqaiyah Yearby, “African American mothers who delivered preterm infants of ‘very low birth weight’ (VLBW) were more likely to experience and report interpersonal racial discrimination during their lifetimes than were African American mothers who delivered infants at term” (Yearby, “Racial Disparities” 1130). Therefore, the struggle of living under the pressures of structural racism causes Black mothers to face increased health risks that may be detrimental to their lives. Stress being the biggest factor negatively affecting Black women, hypertensive disorders are highly seen, and “hypertensive disorders of pregnancy disproportionately affect minority women, who also have a higher risk of adverse outcomes, which include severe maternal morbidity compared with nonminority women” (Jain et al. 10). Ultimately, Black women are faced with increased health risks under societal pressures and poor social determinants of health. Due to the inability for women to reach out to a physician under Obstetric Racism, the preventable effects of these illnesses are often never found.

Although “women who fail to present for prenatal care entirely are at high risk for adverse pregnancy outcomes and are more likely to be nonwhite” (Bryant 6), Black mothers are incapable of reaching out for early prenatal healthcare due to limited income or the disregard from physicians due to Obstetric Racism that leaves vulnerable Black women without care. Black women’s social determinants of health tend to be poor under the stressors of structural racism, which increases their risk for health issues that harm their maternal outcome. However, due to racism embedded within the healthcare system, these health risks tend to go unnoticed by racially biased medical professionals.

Some do not believe in the ideologies of CRT due to the conflict between those who believe we are in a post-racial society and those who believe that racism still abounds. In turn, those individuals disagree with the existence of Obstetric Racism, where they believe all Americans receive equal healthcare treatment indifferent to their race due to enforced law. These legalities include the Civil Rights Act of 1964, which states: “No person shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal assistance” (EEOC). Ultimately, since the Act includes protections of the healthcare system, individuals believe racial disparities within healthcare are nonexistent. However, through historical understanding and research, racism can be held accountable for the greater maternal mortality risks that Black women face despite being under professional medical care. To prove this, CRT was implemented in a California hospital and studied for its results regarding maternal outcomes. By educating medical personnel about the histories of structural racism and the existence of the unconscious racial bias present in numerous medical facilities, “the California Maternal Quality Care Collaborative [CMQCC] provides a multifaceted, solutions-based approach to quality improvement including toolkits on how to address the leading causes of preventable death and complications for mothers and infants” (“Black Woman’s Maternal Health”). By tackling the racial maternal outcome crisis head-on, the CMQCC made a great impact by researching the root causes of specific Black maternal health issues and educating personnel on preventing these issues in the future. As a result, “the CMQCC has, in 13 years, reduced the maternal mortality rate from 16.9 per 100,000 population to 7.3” (Owens and Fett 1344). Therefore, through proper research and investments of time, the statistically high mortality rate for Black mothers decreased by more than half.

The analysis of the CMQCC proves that a commitment to understanding how systemic racism functions within the healthcare system, one built by taking advantage of the enslaved, can save the lives of Black mothers who face these racial disparities today. This quote also portrays the proper validation of CRT, where understanding that the history of slavery is still prevalent, and how the deaths of Black mothers under the healthcare system is caused by ongoing racial oppression. Repairing the US healthcare system is deemed possible if these issues are unveiled.

CONCLUSION

By understanding the historical context behind unequal distribution of social determinants of health through racial bias against Black mothers, my research can conclude that structural racism persists in the healthcare system, causing greater health risks for Black mothers in comparison to White mothers. In addition to structural racism lessening Black Americans' opportunities for a proper living environment and career, the disregard for their needs of care from medical personnel due to racial bias increases the chances of health risks as well as maternal mortality. As Critical Race Theory supports the idea that structural racism on Black Americans produces negative health outcomes, the Obstetric Racism Framework also understands that the structural racism within the healthcare system causes a disregard for the healthcare needs of Black mothers, worsening their quality of care and putting them and their infants at greater risk of health problems. Regarding these theories, greater possibilities of where my research process may go next entail greater detail of racial disparities regarding access to medical insurance as well as the racial infant health outcome disparities, both of which are ultimately harmed under the pressures of structural racism. Black women deserve equal and fair healthcare treatment, and future research can explore new possibilities to lessen the maternal mortality rate among Black women.

WORKS CITED

- "Black Women's Maternal Health." *Black Women's Maternal Health: National Partnership for Women & Families*, Apr. 2018, www.nationalpartnership.org/our-work/health/reports/black-womens-maternal-health.html.
- Bryant, Allison S et al. "Racial/Ethnic Disparities in Obstetric Outcomes and Care: Prevalence and Determinants." *American Journal of Obstetrics and Gynecology* vol. 202, 4 (2010): 335-43. doi:10.1016/j.ajog. 2009.10.864

- Davis, Dána-Ain. "Reproducing while Black: The Crisis of Black Maternal Health, Obstetric Racism and Assisted Reproductive Technology." *Reproductive Biomedicine & Society Online*, vol. 11, 2020, pp. 56-64, doi:10.1016/j.rbms.2020.10.001.
- Gadson, Alexis, M.D., Eloho Akpovi B.S., and Mehta, Pooja K., M.D., M.S.H.P. "Exploring the Social Determinants of Racial/Ethnic Disparities in Prenatal Care Utilization and Maternal Outcome." *Seminars in Perinatology*; *Semin Perinatol*, vol. 41, no. 5, 2017, pp. 308-317, doi:10.1053/j.semperi.2017.04.008.
- Institute Staff. "11 Terms You Should Know to Better Understand Structural Racism." *Aspen Institute*, 11 July 2016.
- Jain, Joses A., et al. "SMFM Special Report: Putting the 'M' Back in MFM: Reducing Racial and Ethnic Disparities in Maternal Morbidity and Mortality: A Call to Action." *American Journal of Obstetrics and Gynecology*; *Am J Obstet Gynecol*, vol. 218, no. 2, 2018, pp. B9-B17, doi:10.1016/j.ajog.2017.11.591.
- Louis, Judette M., M. K. Menard, and Rebekah E. Gee. "Racial and Ethnic Disparities in Maternal Morbidity and Mortality." *Obstetrics and Gynecology* (New York.1953); *Obstet Gynecol*, vol. 125, no. 3, 2015, pp. 690-694, doi:10.1097/AOG.0000000000000704.
- Orchard, Jacob, and Joseph Price. "County-Level Racial Prejudice and the Black-White Gap in Infant Health Outcomes." *Social Science & Medicine* (1982); *Soc Sci Med*, vol. 181, 2017, pp. 191-198, doi:10.1016/j.socscimed.2017.03.036.
- Owens, Deirdre C., and Sharla M. Fett. "Black Maternal and Infant Health: Historical Legacies of Slavery." *American Journal of Public Health* (1971); *Am J Public Health*, vol. 109, no. 10, 2019, pp. 1342-1345, doi:10.2105/AJPH.2019.305243.
- Taylor, Jamila K. "Structural Racism and Maternal Health among Black Women." *The Journal of Law, Medicine & Ethics*, vol. 48, no. 3, 2020, pp. 506-517, doi:10.1177/1073110520958875.
- "Title VII of the Civil Rights Act of 1964." *U.S. Equal Employment Opportunity Commission*.
- Yearby, Ruqaiyah. "Racial Disparities in Health Status and Access to Healthcare: The Continuation of Inequality in the United States due to Structural Racism." *The American Journal of Economics and Sociology*, vol. 77, no. 3-4, 2018, pp. 1113-1152, doi:10.1111/ajes.12230.
- Yearby, Ruqaiyah. "Structural Racism and Health Disparities: Reconfiguring the Social Determinants of Health Framework to Include the Root Cause." *Journal of Law, Medicine & Ethics*, vol. 48, no. 3, 2020, pp. 518-526, doi:10.1177/1073110520958876.

Philippe Chao

Instagram: The Authentic Self Masked Behind the Picture-Perfect Facade

INTRODUCTION

The new generation of social media revolves around the most up-to-date content creators — colloquially known as “influencers” — and how they portray themselves on the digital platform. Serving as a device for entertainment to facilitate communication for people worldwide, social media remains an everlasting presence in life. However, as there is an influx in social media use, there is a shift away from one’s authentic identity. In the media, as individuals who strive for the perfect image, people tend to mold themselves into a glorified image for the pleasure of others. This concept of optimization is so prevalent in modern society, yet barely acknowledged. Everyone is so focused on living up to what the media deems “worthy” that they hardly take the time to actually process the implication of our identity formations. Exemplified through social media platforms, particularly Instagram, people become ingrained in the virtual pretense as they simultaneously divert from their own imperfect selves. This begs the question: how does the perfect image socially constructed by influencers on Instagram complicate the notion of authenticity? Viewed through the lens of Quentin Smith’s theoretical text, Wilshire’s Theory of the Authentic Self, we see a clear correlation between inauthenticity and mimetic behavior which results in a loss of individuation. Additionally, the branding process leads to self-commodification, as well as commodification from mass corporations and institutions in a capitalist system, causing an inauthentic perception for the individual. For instance, through the pressure to conform to others’ standards, many users are encouraged to brand themselves into the perfect image and appearance through commodification, as their own identity and true selves remain masked from the virtual setting. Ultimately, social media corrodes one’s sense of self by encouraging them to connect authentically with an inauthentic reality.

MEDIA'S USE OF EXTENDED COMMODIFICATION THROUGH THE BRANDING PROCESS

Social media fosters an inauthentic perception to users, primarily due to the commodification process that has been normalized by celebrities and big businesses in the capitalist environment. Rosalind Gill expresses her stance on this issue: "The notion [of social media] has become commodified – used to sell everything from washing powder to cosmetic surgery. In a context in which fake 'empowerment' is everywhere and in which... [women] have been taken up and sold back to us emptied of their political force... how can we identify what true empowerment would look like, would feel like?" (2). Under a capitalist system, many people, such as women, are encouraged to advertise their content in order to sell products from "washing powder to cosmetic surgery" in order to "empower" themselves. By broadcasting themselves in order to reproduce "whatever the market demands of her (good looks, the impression of indefinitely extended youth, advanced skills in self-presentation and self-surveillance)", these women are rewarded and praised (Tolentino 64). However, Gill calls this idea of empowerment "fake", which leads to an emptying of forces in a marketing environment dictated by officials in a business organization, also known as what Gill refers to as "political force." Their own political agency, surrounded by what *looks* empowering to the individual, has been confined within the domestic sphere. Thus, Gill questions the idea of authenticity behind this and challenges the nature of empowerment: would power be obtainable if we knew we were gaining some sort of cultural capital from it? In other words, would influencers gain empowerment if he or she attracts the attention of a wealthy audience in order to sell products on their own content? While personalization results in greater exposure of the subject to the public audience, commodification turns these subjects into objects by bestowing them with some monetary value. Many celebrity commodities, in particular, advertise their merchandise in order to seduce their fans into buying the desired product. Olivier Driessens uses the case of Britney Spears' perfume *Curious*, intended "for girls to experiment, to try out sexual scenarios and encounters, both with boys and other girls" (22). While consumers have the free choice to purchase this fragrance, producers themselves have the original power to attract them for their commercial advantage. As Driessens furthers, "the celebrity as a public individual who participates openly as a marketable commodity serves as a power-

ful type of legitimation of the political economic model of exchange and value — the basis of capitalism — and extends that model to include the individual” (22). Hence, celebrities are considered products of capitalism. They hold hegemonic status on social media, equating their power to marketable tactics used on consumers. Exemplified through Britney Spears’ perfume, celebrities associate their appearance and name in order to persuade consumers to buy the desired product, while simultaneously getting paid for their recognition. As a result, as celebrity endorsements extend from traditional methods to social media, the role of celebrities becomes vital through the interaction with consumers. Thus, consumers find themselves connecting with an inauthentic perception due to the commodification of social media in the capitalist system.

Along with self-commodifying and being used as a commodity by others, social media influencers are also encouraged to develop a personal brand by monetizing their content through partnerships with marketing corporations and teams, pressuring them to live inauthentically even more. Rachel Faleatua argues that developing a personal brand *is* attainable through an authentic mindset. In order to develop a successful self-brand, Faleatua notes, “one not only has to brand themselves as authentic but literally has to be ‘authentic,’ the process of being transparent, without artifice, open to others... allowing the outside world access to one’s inner self” (12). Yet, the extent of authenticity measured remains obscured. Granted, self-branding involves some sort of honesty and open-mindedness, as Faleatua points out, but how do we know that the content is considered “authentic?” While the image that influencers put virtually may *appear* authentic, the degree of realness and “transparency” cannot be accurately measured, leaving viewers questioning whether that certain representation is even “authentic” in the first place. As a matter of fact, “SMIs’ [social media influencers]’ followers are attracted by the opportunity to access content that originates from other ‘ordinary’ consumers thought to be noncommercial in nature... [but] their intrinsic desires to create content about their personal passions might be sidetracked by commercial opportunities to promote brands or products they would not ordinarily be interested in” (Audrezet et al. 56). Such monetary gains would, to whatever extent, dictate content and presentation. Through commercial incentives such as advertisements, endorsements, and sponsorships, although influencers are able to budget their content in a positive way, many are prone to lose their own sense of authenticity and transparency instead. They fabricate an image that promotes their

own personal brand within the capitalist system, irrespective of their own original interests and desires. Layered by the constant influence of mass corporations and incentives that dominate the media industry, many influencers are warped into a dimension where their value and success are only solely determined by some economic gain. As a result, their content becomes a monetized platform for self-branding. As these branding encroachments force their platform to become commodified, influencers' authenticity is subsequently jeopardized.

FABRICATING AN IMAGE FOR STATUS IN THE INCLUSIVE INSTAGRAM "COMMUNITY"

Through the culture of Instagram, users forge another image in order to preserve their identity devoid of the negative light in the virtual community, forcing them to juggle between two identities. On Instagram, "users are roused to pursue markers of visibility in the form of likes, favorites, and comments. On the surface, it seems that the greater one's visibility, the better; careers are born, new social connections forged, and opportunities for status and professional success abound" (Duffy and Hund 1). Through features such as likes and comments that provide quantifiable embodiments of the attention users so desperately crave, they feel welcomed into the "social community" that builds recognition and new opportunities. This dimension of inclusiveness is what makes social media so appealing. By fostering an environment that is guided by these quantified features, celebrity status and fame seem attainable primarily to ordinary people never before. As a result, Instagram enables us to feel a sense of community and intimacy that is not necessarily real or tangible, forcing us to clash between two contrasting identities. Based on Scott Ross's scholarly research, "not only do people fashion self-representations to attain *likes* on Instagram, but *likes* constitute and animate these images. Instagram posts are 'the creatures of collectives, rather than authors — created collaboratively and, once posted, further animated by *likes* and comments which add to their social biography" (22). By referring to Instagram posts as "collectives" rather than "authors," Ross is suggesting a hybrid identity, with only a part of which would be authentically ours. The pressures of self-presentation that encourage people to post content only well-liked by others rather than their own authentic selves lead to a lack of originality and creative thinking. The use of the word "animate" is also unique here. Through the process of self-presentation, Ross is

emphasizing that likes have become a part of our own “social biography,” which projects a level of artificiality for something that is supposed to be authentic. By posing an image that is not indicative of the *true* self, users are conflicted between a dual of identities- their own authentic identity and the performative counterpart. The authentic identity “is equated with the self that an individual believes to be authentic but seldom shared with others. In this sense, the true self is the hidden self. Somewhat paradoxically, the lived self as expressed in our relationships with others becomes the inauthentic self, while the hidden self that we seldom share is the authentic us” (Motion et al. 61). Thus, we can also associate our authentic self with the hidden self, the part that is concealed and invisible to the public. The fake persona that we see through online postings is strongly contrasted with the personality in an offline setting. We subsequently see this duality of difference that forces users to juggle between two contrasting identities.

While there is a desire to create unique content that enables the audience to connect authentically, the notion of “cancel culture” hinders this from occurring. Cancel culture is a normalization today in social media platforms to “cancel” or end influencer’s careers based on their decisions, actions, and opinions that may seem disruptive or inappropriate to the public audience. A podcast titled “The Callout” shares the story of a musician named Emily who was lauded for standing up for her bandmate who was cyberbullied, but was shortly canceled after an action participated in high school: “posting a laughing emoji in response to another girl posting a nude photo of a third girl” (Ng 6). Stemming from the case of Emily, Ng commented on “the zeal for ideological purity and the loss of a reasonable scale of transgression within cancel culture — the same treatment meted out to someone who made a single problematic post years ago as to someone with an established pattern of sexual harassment” (6). The premise of cancel culture revolves around a denunciation of people, and most of the negativity that targets those people has been exaggerated, such as the example from Emily. The horrifying reality of social media, then, is that one small moment of transgression can overshadow the good in someone, no matter what amount. With the constant threat of being canceled, and cancel culture at large, many content creators tend to publish content that does not expose them in a negative light, shielding themselves from potential backlash as they fabricate an image that pleases the common audience, which promotes inauthenticity. In order to “avoid traversing into territory deemed overly real, [users]

engaged in various modes of self-censorship. The most obvious defensive act was a basic filtering out of anything they believed could be perceived as objectionable by family, friends, or potential employers” (Duffy and Hund 40). By engaging in modes of self-policing and self-censorship, social media users strategically post their content in order to avoid having something embarrassing or dark in their past brought back to light. They filter content based on the needs of others rather than themselves. Thus, in a society that lives amid calling out others for their actions, efforts to provide an “authentic” self-representation become complicated due to the threat of cancel-culture which promotes a fabrication of another identity. Looking through the lens of cultivation theory initially devised by George Gerbner, he explains that people who are repeatedly exposed to the media influence their decisions and beliefs in accordance with that of the media, affecting their attitudes and behaviors about the real world over time. In James Potter’s critical analysis of the cultivation theory, “mass-produced messages [from media] form ‘a common culture through which communities cultivate shared and public notions about facts, values, and contingencies of human existence... Such examination is necessary in its analysis of the processes and consequences of institutionalized public acculturation’” (123). With influence from such external forces, many people fall victim to social norms that are intended to unite a so-called “common culture.” This interconnectedness is the driving force for why users are influenced by the ideas of the media so easily — by preserving what the *media* deems right, they are praised and accepted. What many fail to realize, though, are the consequences that erupt, primarily those complicating the idea of authenticity. Consequently, in a society that normalizes these constructs into everyday behavior, free expression and creative thinking almost diminish indefinitely.

THE NOTION OF MIMETIC BEHAVIOR

Through instances of mimetic behavior or social conformity, many users on social media feel a sense of belonging, obscuring the perception of what it means to really be authentic. In a community that revolves around conforming to a specific set of ideals, many users resort to being fake or fitting in, due to the many positive implications that it holds. These positive implications are shown through the research report by Rick van Baaren et al. According to this study, mimicry increases prosocial behavior, as “participants who had been mimicked were more

helpful and generous toward other people than were non-mimicked participants... Doing what others do is so beneficial in such a diverse array of social situations, which is why people imitate each other” (4). Yet, although mimicry can be seen as this force of benefit in different social situations, the question of authenticity prevails. Are we blindly conforming to others without question, or are we taking the time to process the implications - remodeling the influences of others and molding it into something that makes sense logically and morally? Wilshire makes this comparison in his theory of the authentic self. According to Wilshire, “the self is mimetic at bottom and therefore the question of authentic vs. inauthentic existence is a question of how the self is mimetically involved with others. ‘Does he do so as engulfed or as his own?’ Summarily put, ‘inauthenticity obtains whenever the person self-deceivingly manipulates the other’s recognition so that his own individuation is subverted’ (Smith 346). Based on van Baaren et al.’s study, mimetic behavior can be viewed as a positive factor in multiple social aspects and behavior. However, Wilshire elucidates that it is not this clear-cut. While measuring the level of authenticity based on how we associate with others, Wilshire argues that it comes down to the matter of *how* the self is “mimetically with others.” If we are “engulfed” by mimetic behavior through behaviors of blind conformity, then inauthenticity prevails. If we associate mimicry with “our own” entity, then a level of authenticity can be achieved since our “individuation” is *not* subverted; rather, it is preserved. By making this distinction, Wilshire stresses that authenticity is achieved by recognizing the mimetic attachment to others, not necessarily denying it.

Along with recognition of the self, mimicry is also associated with the extent of information absorbed and how much that dictates everyday actions. Indeed, through forms of mimicry, as scholar Yang Cheng et al. suggests, “SMIs [social media influencers] inspire the target consumer to accept their recommendations (e.g., a corporate social responsibility initiative) through the mechanism of mimicry when the target consumer perceives the SMIs as role models” (Cheng et al.). Yet, through this act of imitation, authenticity diminishes, as consumers who follow their “role models” lose their own individual sense of creative thinking and originality, aligning their ideas in accordance with that of the dominating party (the influencers). Granted, mimicry can be seen as a positive factor for certain consumers, but circling back to Wilshire’s theory of the authentic self, “It is not by ridding oneself of imitative behavior that one becomes authentic; rather, authenticity is achieved through *recognizing*

the mimetic character of one's behaviors and attitudes and *consciously incorporating* them into one's self, so that one no longer allows the 'incorporation' to remain on the undeliberate and uncontrolled level... Once one has recognized this, it becomes possible to vary deliberately on the theme of the original interpretation until one has arrived at the best-suited interpretation" (Smith 346). Hence, each individual's uniqueness is not seen in who he or she is, but in who he or she acts and becomes. It not only involves knowing oneself physically, but it also entails recognizing mimetic behavior from others. This open-mindedness of behavior allows for exposure. By learning new beliefs and ideas from others, we are able to process and decipher between what is morally right and wrong. However, while Wilshire does acknowledge this, he remains cautious of the *extent* of information absorbed. Through the influence of others and their beliefs, Wilshire says that there needs to be a balance between the influence of mimetic behavior from others *and* the personal self. By finding a path in which both systems harmonize, we are able to remain on the influence of others on social media through an "undeliberate and uncontrolled level" while simultaneously finding the "best-suited interpretation" through our own self and decision-making. Such a pattern is the basis of what defines an authentic self. Thus, by recognizing the differences between the authentic self versus the *expected* self on social media, we see a change in how mimetic behavior is portrayed and understood.

CONCLUSION

In this paper, I examined the issue regarding the picture-perfect image socially constructed by influencers on Instagram, which complicates the idea of authenticity. I dive into the notion of commodification and how celebrities have become self-commodifying, as well as a commodity, in order to satisfy the demands of the capitalist market, developing a self-brand to monetize their content under partnerships with businesses and other huge corporations. I then synthesize the fabrication of images on social media with George Gerbner's cultivation theory in order to argue the "interconnectedness" that many users strive for, rewiring their beliefs in accordance with those of the media in order to enter the delusion of social media inclusiveness. I then couple Wilshire's philosophy of authenticity to explore the notion of mimetic behavior and conformity. Through these analyses, I have demonstrated the obscurity of authenticity in the digital world of Instagram. The digital intimacies on

social media create a shared sense of belonging and connectedness, assisting influencers in establishing branding and commercial value through marketing endorsements and commodities. But while we do see this sense of inclusiveness, we see an absence in how authenticity ties everything together. Due to the fear of being vulnerable or exposed, many people are inclined to mask their true feelings and beliefs, leaving the word “authentic” into ambiguity. Thus, we are forced to question: is the content that we see fully indicative of authentic self-representation? Perhaps the true value of authenticity is not by expressing what is *expected* of them so that they will be perceived in a good light, but rather *acknowledging* its limitations and knowing when to resist external forces in one’s ultimate self-realization.

WORKS CITED

- Audrezet, Alice, et al. “Authenticity under Threat: When Social Media Influencers Need to Go beyond Self-Presentation.” *Journal of Business Research*, vol. 117, Sept. 2020, pp. 557–569., <https://doi.org/10.1016/j.jbusres.2018.07.008>.
- Cheng, Yang, et al. “Social Media Influencers in CSR Endorsement: The Effect of Consumer Mimicry on CSR Behaviors and Consumer Relationships.” *Social Science Computer Review*, vol. 39, no. 4, Aug. 2021, pp. 744–761, doi:10.1177/0894439320987184.
- Driessens, Olivier. “The Celebritization of Society and Culture: Understanding the Structural Dynamics of Celebrity Culture.” *International Journal of Cultural Studies*, vol. 16, no. 6, Nov. 2013, pp. 641–657, doi:10.1177/1367877912459140.
- Duffy, Brooke, and Emily Hund. “Gendered Visibility on Social Media: Navigating Instagram’s Authenticity Bind.” *International Journal of Communication* [Online], 13 (2019): 20.
- Faleatua, Rachel. “Insta brand me: playing with notions of authenticity.” *Continuum* 32 (2018): 721 - 732.
- Gill, Rosalind. “Media, Empowerment and the ‘Sexualization of Culture’ Debates.” *Sex Roles*, vol. 66, no. 11-12, 2012, pp. 736–745., <https://doi.org/10.1007/s11199-011-0107-1>.
- Motion, Judy, et al. *Social Media and Public Relations: Fake Friends and Powerful Publics*. Routledge, 2019.
- Ng, Eve. “No Grand Pronouncements Here...: Reflections on Cancel Culture and Digital Media Participation.” *Television & New Media*, vol. 21, no. 6, Sept. 2020, pp. 621–627, doi:10.1177/1527476420918828.
- Potter, W. James. “A Critical Analysis of Cultivation Theory.” *Journal of Communication*, vol. 64, no. 6, 27 Oct. 2014, pp. 1015–1036., <https://doi.org/10.1111/jcom.12128>.
- Ross, Scott. “Being Real on Fake Instagram: Likes, Images, and Media Ideologies of Value.” *Journal of Linguistic Anthropology*, vol. 29, no. 3, 7 May 2019, pp. 359–374., <https://doi.org/10.1111/jola.12224>.
- Smith, Quentin. “Wilshire’s Theory of the Authentic Self.” *Human Studies*, vol. 14, no. 4, Springer, 1991, pp. 339–57, <http://www.jstor.org/stable/20010943>.

Tolentino, Jia. "Always be Optimizing," *Trick Mirror: Reflections on Self-Delusion*. Random House, 2019, pp. 63-94.

van Baaren, Rick B., et al. "Mimicry and Prosocial Behavior." *Psychological Science*, vol. 15, no. 1, Jan. 2004, pp. 71-74, doi:10.1111/j.0963-7214.2004.01501012.x.

Ashley Angarola

Don't Be So Quick to Veto Keto: How a Low-Carb Diet Can Impact the Mind

ABSTRACT

The ketogenic diet, more commonly referred to as the “keto diet”, has been a popular topic of conversation in the world of nutrition and dietetics. The basis of the diet requires a low-carb high-fat intake in order to reach a state of ketosis. Elevation of ketone bodies provides an additional or alternative energy source for the brain. Specifically, meat, seafood, eggs, healthy fats, low-carb vegetables, and nuts are commonly consumed by those following this diet. Recently, there has been buzz around the diet and its use in the medical community in treating cognitive dysfunctions. Researchers argue that the keto diet can have very powerful benefits on the brain. However, the cognitive benefits of the ketogenic diet are still doubted by skeptics, viewed as just another fad diet soon to be fazed out. This debate raises the question: how does the ketogenic diet impact cognitive functioning, and can the diet be effective in preventing and treating mental dysfunctions, specifically Alzheimer’s disease? This paper investigates how the ketogenic diet directly impacts the mind through the process of ketosis, as well as research on how effective it is in preventing and treating Alzheimer’s disease.

DON'T BE SO QUICK TO VETO KETO

Recently, the ketogenic diet has been getting a lot of attention from the media and dieters around the world. This popular, yet controversial dietary approach involves lowering carbohydrate intake in order to reach a state of ketosis. Increased production of ketone bodies can provide the brain with an additional or alternative energy source. Recently, there have been discoveries in regards to the ketogenic diet that involve much more than just weight loss. There is a debate over whether the ketogenic diet can actually improve cognitive functioning. Researchers argue that the keto diet can have very powerful benefits on the brain. It has been discovered that switching from a state of glycolysis to a state of ketosis can be effective in preventing and treating Alzheimer’s disease. In the research

article “Ketogenic Diet in Alzheimer’s Disease,” Rusek et al. (2019) mention how the “KD (ketogenic diet) has beneficial effects for enhancing mitochondrial function and cellular metabolism. It is associated with improved cognitive performance in elderly adults with Alzheimer’s disease” (p. 12). This paper will examine how the ketogenic diet directly impacts the mind and how effective it is in preventing and treating Alzheimer’s disease. Other cognitive dysfunctions, such as epilepsy in children, have also been studied by researchers and proven to be positively affected by the ketogenic diet.

Some are skeptical of the ketogenic diet, labeling it as just another fad diet soon to be faded out. However, many researchers, including Lilamand et al., are confident in the research being conducted and believe that the ketogenic diet can be very beneficial to the medical community. The dispute centers on this question: how does the ketogenic diet impact cognitive functioning, and can it effectively prevent and treat mental dysfunctions, specifically Alzheimer’s disease? The ketogenic diet promotes brain rejuvenation, leaving a positive impact on the cognitive functioning of both those looking to prevent Alzheimer’s disease and those looking to treat it. Research proves that the ketogenic diet is more than just a fad diet, and that it can be very beneficial in boosting brain functions.

I will begin this paper by discussing proven research about the interaction between the ketogenic diet and seizure disorders. This will provide background knowledge surrounding the use of the ketogenic diet in the medical community. I will then discuss the science behind how the keto diet directly impacts the mind, introducing the theoretical frameworks of ketosis and amyloid beta plaques. These two frameworks will help explain what exactly is going on in the brain when there is such a drastic change in carbohydrate and glucose intake. After discussing how the ketogenic diet impacts the mind, I will discuss how Alzheimer’s directly impacts the mind. Research on glucose and its effects on the brain will be provided, as well as a description of how amyloid beta levels play a role in Alzheimer’s. After discussing the ketogenic diet and Alzheimer’s separately, I will analyze how the ketogenic diet interacts with cognitive functioning to prevent Alzheimer’s, followed by how the ketogenic diet interacts with cognitive functioning to treat Alzheimer’s. I will focus mainly on the two theoretical frameworks concerning amyloid beta levels and ketosis as explanations for the ketogenic diet and Alzheimer’s interaction on the mind. Conversely, I will touch on some limitations of the ketogenic diet in regards to cholesterol levels. The paper will conclude

with the implications of the findings, as well as a possible legacy for future researchers to continue studying how the ketogenic diet can be used for neurodegenerative diseases.

BACKGROUND: PREVIOUS USE OF THE KETOGENIC DIET IN THE MEDICAL COMMUNITY

Research has already proven the ketogenic diet to be beneficial to those suffering with seizure dysfunctions, as it is currently being utilized by the medical community as a treatment method. These research findings provide further evidence that the ketogenic diet is not simply a fad diet, but a tool that can be used to help those with cognitive impairments. However, the use of the diet does not stop at seizure control; from depression to multiple sclerosis to cancer, studies have shown that some effects of the keto diet are efficient in providing assistance to these complicated diseases. Dravet Syndrome, a severe and rare drug-resistant seizure disorder in infancy, was researched by Wang et al. in order to test the efficacy of the keto diet in alleviating its symptoms. Unfortunately, the syndrome is very difficult to treat, as few antiseizure medications are effective. However, researchers discovered that the ketogenic diet treatment improved the cognitive development and behavioral disorders in patients with Dravet Syndrome. Wang et al. reports, “According to their parents’ description at the week 24 visits, 22 patients had improved cognitive function after 6–12 months with KD treatment. Language ability progressed in 14 patients. Motor function was improved in 13 patients” (Wang et al., 2020). These discoveries provide evidence that the ketogenic diet does indeed improve cognitive functioning, as well as behavioral impairment. In regards to Dravet Syndrome, the ketogenic diet leaves a positive impact on those struggling with impairments, and is being utilized as a treatment for the troubling syndrome. The ketogenic diet has also been effective in treating patients with epilepsy by averting harmful brain reactions. A recent research study has found the ketogenic diet to be effective in treating intractable epilepsy in ALG3-CDG. CDG is a heterogeneous group of congenital metabolic diseases, and ALG3-CDG is a very rare subtype. Researchers studied two siblings with ALG3-CDG and found that their intractable seizures were controlled by the ketogenic diet. Researchers recorded that “After the first week of the diet, there were no seizures, and alertness increased... The patient is on the 10th month of levetiracetam (30 mg/kg/g) and ketogenic diet treatment and does not

exhibit any complications or seizures” (Paketci et al., 2020). The patients’ seizures were controlled as a direct result of adopting the ketogenic diet, allowing for the conclusion that the ketogenic diet can be considered a good treatment option for intractable epilepsy in ALG3-CDG patients. In both studies, adopting the ketogenic diet controlled seizures in two disorders that have been extremely difficult to treat. Like these seizure dysfunctions, Alzheimer’s had no real prevention or treatment option prior to research on the ketogenic diet. Research on the ketogenic diet and Alzheimer’s disease could very well be as efficacious as the ketogenic diet’s effects on seizure dysfunctions. The results of both studies by Wang et al. and Paketci et al. provide solid evidence for the conclusion that the ketogenic diet is effective in treating epileptic disorders and can continue to be utilized in the medical community.

COGNITIVE FUNCTIONING (ALZHEIMER’S DISEASE AND THE KETO DIET)

Alzheimer’s disease negatively impacts cognitive functioning, as glucose utilization declines and amyloid beta levels rise. Currently, there are no cures for Alzheimer’s disease, as the disease has been proven very difficult to treat. Researchers have focused on rising amyloid beta levels in the brains of patients and found correlational evidence between the two. It has been discovered that amyloid beta levels play a large role in cognitive decline in Alzheimer’s. As researched by Moustafa et al. (2021), “Latent growth curve models have identified that high levels of amyloid- β , the APOE gene, and tau are predictive of rapid memory decline in Alzheimer’s disease” (p. 2). Brain scans can detect these changes, as shown in this study. However, there is still no explanation given on how to lower or even get control of these rising amyloid beta levels. Researchers know enough about detecting Alzheimer’s disease and what physiological changes occur, yet there is still a struggle for treatment. Amyloid beta levels are not the only physiological change seen in Alzheimer’s patients. A series of studies have been conducted on the process of glycolysis, the breakdown of glucose and subsequent energy release, and its correlation with Alzheimer’s. A decrease in brain glucose consumption has been observed in early Alzheimer’s patients decades before neuronal death and clinical symptoms even occur. Bergau et al. conducted a study on the reduction of glycolysis intermediate concentrations in Alzheimer’s patients. The researchers tested the metabolites, substances formed

for metabolism, from patients suffering from Alzheimer's disease. They found that there was a "significant reduction of five [metabolites]... in the AD [patients] compared to controls. These results correlate with the known reduction of glucose metabolism in the brain of patients with AD" (Bergau et al. 2019). It is apparent that glucose becomes problematic in a brain with Alzheimer's, as it can no longer be broken down and utilized as energy. An alternate source of energy must be released and utilized in order to solve this problem. Without an efficient energy source, the brain will not be able to work properly and cognitive functioning will continue to decline. Medical professionals and researchers must find a method that lowers amyloid beta levels and replaces the process of glycolysis in order to help Alzheimer's disease patients.

The ketogenic diet has been proven to have a positive impact on cognitive functioning, as memory performance improves simultaneously with a decrease and toxic amyloid beta levels. Ketosis is responsible for a large portion of these cognitive changes, as the body burns ketone bodies as its main source of energy, rather than glucose. Troubles with cognitive functioning begin when the brain struggles to break down and utilize glucose as its energy source. Without any carbohydrate intake, there is no glucose production. Rusek et al. (2019) discussed a research study where "Krikorian et al. [77] compared a low carbohydrate diet with a high carbohydrate diet in 23 adult patients with MCI treated for over six weeks. The low carbohydrate diet showed better verbal memory performance, positively correlated with KBs (ketone body) levels in the carbohydrate-restricted group" (p. 11). The patients in this study showed improved brain functioning that was a direct result of increasing ketone body levels. The ketogenic diet clearly does more than just impact physical appearance, as the subjects in this study with moderate cognitive impairment showed better memory performance. As the process of ketosis occurs, the brain is able to utilize a new source of energy: ketone bodies. By training brains to utilize ketones, there is now an alternate fuel for the mind when glucose utilization declines. Ketones are formed in the liver from the breakdown of fats and are made when there is no longer glucose to supply the mind's fuel needs. This means patients will have to make a decision to switch from one form of fuel to another through dieting, making diet adherence very important. Another study evaluating the effects of the ketogenic diet on the brain has discovered other major changes. Van der Auwera et al. (2005) studied how amyloid beta levels in the brain decline as a result of adopting the ketogenic diet. In their study, they

observed that “43 days after dietary change, levels of soluble amyloid- β in the brain were measured in both groups of animals... Levels of both soluble amyloid- β 40 and 42 were found to be significantly lower in the KD (ketogenic diet) fed group” (p. 4). High amyloid beta levels in the brain and amyloid beta plaques are known signs of cognitive decline. Therefore, the ketogenic diet significantly decreasing amyloid beta levels is extremely beneficial. As one stops the intake of carbohydrates, neurological changes in the brain must occur to accommodate for the lack of glucose. These accommodations positively impact the brain as ketone bodies are utilized and improve cognitive functioning.

EFFECTS OF KETOGENIC DIET ON THE ALZHEIMER’S BRAIN (PREVENTION & TREATMENT)

Early adoption of the ketogenic diet could potentially be effective in preventing the development and progression of Alzheimer’s for those at risk. Alzheimer’s disease progresses as the brain struggles to utilize glucose as energy, damaging neural connections and overall brain functioning. However, recent research has now shown evidence of ketone bodies being utilized by neurons for energy metabolism. Ketone bodies may provide an alternate energy source to a cognitively declining brain in place of the inefficient glucose. A study by Neth et al. (2020) compared “the effects of a modified Mediterranean-ketogenic diet (MMKD) and an American Heart Association Diet (AHAD) on cerebrospinal fluid of Alzheimer’s patients, as well as cognition in older adults at risk for Alzheimer’s” (p. 1-2). The typical diet of one following keto consists of meat, seafood, eggs, healthy fats, low-carb vegetables, and nuts. However, the modified Mediterranean-ketogenic diet is more lenient, allowing for some fruits, mainly berries, and a moderate amount of daily wine. In this study, “Twenty participants with subjective memory complaints ($n = 11$) or mild cognitive impairment ($n = 9$) completed both diets... There was increased cerebral perfusion and increased cerebral ketone body uptake following MMKD... Both groups showed better performance on FCSRT (the Free and Cued Selective Reminding Test) after MMKD” (Neth et al., 2020). This study presents evidence where subjects at risk for Alzheimer’s disease showed improvement in memory and cognition after adopting the ketogenic diet. There was also an increase in cerebral ketone body uptake, where the brain utilized ketone bodies instead of glucose as its main energy source. Considering there is currently no established therapy

to treat or prevent Alzheimer's disease, this information is quite substantial. Ketosis replacing glycolysis has been proven to be a step in the right direction in preventing Alzheimer's disease. Another study on glycolysis and ketosis yielded similar results regarding ketone bodies. Researcher Dariusz Wlodarek assessed the role of ketogenic diets in neurodegenerative diseases. Wlodarek cites a study where "Ma et al. [33] investigated the influence of the ketogenic diet on the neurovascular function[s] ... in young healthy mice. They observed that this diet may enhance brain vascular function... [and] may also reduce the risk of AD" (Wlodarek, 2019). Even in young healthy mice who had not yet developed any neurodegenerative disease, the ketogenic diet was successful in improving neurovascular functioning, a motor and sensory type of cognitive functioning. Wlodarek himself states how this information about the effects of the diet on the mind may be useful in reducing the risk of Alzheimer's disease. The studies by Neth et al. and Wlodarek provide substantial information in regards to the ketogenic diet and how it can be utilized to help individuals prevent Alzheimer's disease.

By making accessible a new and efficient source of fuel to the brain, the ketogenic diet works to produce physiological changes that can counteract the harmful effects of Alzheimer's disease. An important focus has been on reducing amyloid beta levels, the main component of harmful amyloid plaques found in the brains of people with Alzheimer's disease. By removing or even just lowering the amount of the noxious components that erode neuron connections, cognitive dysfunctions can be improved significantly. The amyloid beta plaques are these noxious components responsible for the distinct characteristics of Alzheimer's patients. A few of these characteristics include memory loss, impaired reasoning and judgment, and even visual issues. As neurons are responsible for signaling all of these features, their disconnection and impairment as a result of amyloid beta plaques are detrimental. In regards to the ketogenic diet, studies suggest that it is efficient in counteracting biochemical changes observed in Alzheimer's disease. A study by Rusek et al. (2019) shows that "Rodents treated with the [keto diet] ... display reduced brain A β (amyloid beta) levels, protection from amyloid- β toxicity, and improved mitochondrial function. In the transgenic mice model of [Alzheimer's Disease], it was observed that the [Ketogenic diet] made soluble A β deposits level in their brain 25% less after only 40 days" (p. 5). This research provides information crucial to the medical community in regards to Alzheimer's. The task of lowering amyloid beta levels or

even just preventing more plaques from developing has been a struggle. Yet now there is evidence that adopting the keto diet can reduce levels of amyloid beta in the brain, which in turn can protect people from amyloid beta toxicity. Rusek et al. are not the only researchers that have provided evidence for the positive effects of the ketogenic diet on the brain of patients with Alzheimer's disease. Lilamand et al. conducted a review based on a systematic search of interventional trials published from January 2000 to March 2019 found on MEDLINE and Cochrane databases. They discovered that "Five studies specifically assessed the changes in A β and/or tau deposition in AD (Alzheimer's Disease) mouse models. Kashiwaya et al and Van der Auwera et al. described a decrease in A β deposition in the brain of KD-fed female APP [V7171] and male 3xTgAD mice, respectively" (Lilamand et al., 2020). In this study as well, subjects with Alzheimer's disease showed a decrease in amyloid beta deposition in their brains after adopting the ketogenic diet. If patients with Alzheimer's consult with their doctors and look to adopt the keto diet, levels of amyloid beta in the brain are likely to decrease, treating symptoms. The ketogenic diet has been proven to be more than just a quick weight loss kick. It is a very possible and serious option for individuals looking to treat Alzheimer's.

LIMITATIONS

The ketogenic diet has been proven to leave a positive impact on the mind of individuals suffering with mental dysfunctions, but it is important to note its adverse effects on those with other underlying issues. A case study was conducted on a 52-year-old woman presented with hyperlipidemia practicing a high-fat, ketogenic diet. She had been on the ketogenic diet for almost 5 months and lost about 30 pounds. Although the weight loss was a positive, her LDL (low-density lipoproteins), and HDL cholesterol levels increased significantly. Before starting the diet, "the patient's initial lipid levels of total, LDL, and HDL cholesterol were 213 mg/dL, 142 mg/dL, and 43 mg/dL, respectively... After 5 months on the diet, her total, LDL, and HDL cholesterol was 676 mg/dL, 533 mg/dL, and 60 mg/dL, respectively" (Goldberg et al., 2021). Unfortunately the woman in this case study had a family history of hyperlipidemia. Because of this history and lack of consultation with a doctor, the woman's cholesterol levels rose significantly as a result of the ketogenic diet. High cholesterol as a result of the ketogenic diet has been a problem in other cases as well. In a study done by Harmon et al., researchers tested if patients with

predisposition to cholesterol metabolism dysregulation may have a rise in cholesterol levels in response to ketogenic dieting. Five patients were reviewed in the study, and three of them had a family history of early cardiovascular disease. The patients were on the ketogenic diet for about 8 months. The results show that “The average baseline LDL cholesterol for this group was 124(±30)mg/dL... While dieting, these patients had a mean LDL cholesterol of 394 mg/dL (median 300 mg/dL) with an average LDL cholesterol 295% increase from baseline” (Harmon et al., 2020). From this study, researchers were able to conclude that some of the individuals who experience a significant increase in total and LDL cholesterol levels may have been a result of variations in genes regulating cholesterol absorption. Both of these studies by Goldberg et al. and Harmon et al. highlight the importance of monitoring cholesterol in individuals starting the ketogenic diet. Although some may face troubles with raising cholesterol levels, it is not experienced by all and not a threat to all. In a study by Neth et al. (2020), it was shown that “total cholesterol was unchanged by the MMKD (modified mediterranean ketogenic diet). VLDL cholesterol levels were reduced by MMKD ($p = 0.02$)” (p.9). Subjects in this study actually displayed opposite experiences with cholesterol levels than the other two cases presented previously. This study by Neth et al. proves that an increase in cholesterol level is not something experienced by all those on the ketogenic diet. It is likely that it will only occur in those who are already at risk for high cholesterol, or have other underlying issues. Consultation with a medical professional is crucial to starting one’s ketogenic journey, as failure to do so may result in health complications.

CONCLUSION

Extensive research on the ketogenic diet proves to the general public that this low-carb diet can be effective in treating brain dysfunctions, specifically Alzheimer’s disease. The ketogenic diet promotes brain rejuvenation, leaving a positive impact on the cognitive functioning of both those looking to prevent Alzheimer’s disease and those looking to treat Alzheimer’s disease. Research proves that the ketogenic diet is more than just a fad diet, and that it can be very beneficial in boosting brain functions for a variety of individuals. The process of ketosis provides the Alzheimer’s brain with an alternative energy source, allowing for prevention and treatment for those suffering with Alzheimer’s disease. Research has also proven the keto diet to be efficient in lowering amyloid

beta levels in the brain, a known cause of Alzheimer's. With even further research, the ketogenic diet can be a very possible prevention method and treatment for Alzheimer's disease. Although some have experienced adverse effects of high cholesterol, consultation with a medical professional could prevent these adverse side effects. Spreading this information about the ketogenic diet and its impacts on the brain is a necessity, as many suffering with Alzheimer's may not even know this simple diet could provide significant help. Nutrition has a very large impact on not only our physical appearance, but even the way our brain functions. Ultimately, the ketogenic diet has been proven to be effective in aiding the treatment and prevention of a neurodegenerative disease and should be implemented as a prevention and treatment method by the medical community.

REFERENCES

- Bergau, N., Maul, S., Rujescu, D., Simm, A., & Navarrete Santos, A. (2019). Reduction of Glycolysis Intermediate Concentrations in the Cerebrospinal Fluid of Alzheimer's Disease Patients. *Frontiers in neuroscience*, 13, 871.
- Goldberg, I.J., Ibrahim, N., Bredfeldt, C., Foo, S., Lim, V., Gutman, D., Huggins, L.A., Hegele, R.A. (2021). Ketogenic diets, not for everyone. *Journal of Clinical Lipidology*, 15(1), 61-67.
- Harmon, D., Regner, S., Osman, K., Shanhan, C., Kheiri, B., Kadiyala, M., Sokos, G., Sengupta, P.P, Michos, E.D., & Bianco, C. (2020). Dramatic LDL-Cholesterol elevation with Ketogenic Diet: A Case Series. *American Journal of Preventive Cardiology*, 3, 1.
- Lilamand, M., Porte, B., Cognat, E., Hugon, J., Mouton-Liger, F., & Paqurt, C. (2020). Are ketogenic diets promising for Alzheimer's disease? A translational review. *Alzheimer's Research & Therapy*, 12(42), 1-10.
- Moustafa, A.A., Tindle, R., Alashwal, H., & Diallo, T. M.O. (2021) A longitudinal study using latent curve models of groups with mild cognitive impairment and Alzheimer's disease. *Journal of Neuroscience Methods*, 350, 66-89
- Neth, B.J, Mintz, A., Whitlow, C., Jung, Y., Sai, K.S., Register, T.C., Kellar, D., Lockhart, S.N., Hoscheidt, S., Maldjian, J., Heslegrave, A.J., Blennow, K., Cunnane, S.C., Castellano, C.A., Zetterberg, H., & Craft, S. (2020). Modified ketogenic diet is associated with improved cerebrospinal fluid biomarker profile, cerebral perfusion, and cerebral ketone body uptake in older adults at risk for Alzheimer's disease: a pilot study. *Neurobiology of Aging*, 86, 54-63.
- Paketcı, C., Edem, P, Hiz, S., Sonmezler, E., Soydemir, D., Sarıkaya Uzan, G., Oktay, Y., & O'Heir, E. (2020) Successful treatment of intractable epilepsy with ketogenic diet therapy in twins with ALG3-CDG. *Brain and Development*, 42(7), 539-545.
- Rusek M., Pluta R., Ułamek-Koziol M., & Czuczwar S.J. (2019). Ketogenic Diet in Alzheimer's Disease. *International journal of molecular sciences*, 20(16), 3892.
- Van der Auwera I., Wera S., Van Leuven F., & Henderson S.T. (2005). A ketogenic diet reduces amyloid beta 40 and 42 in a mouse model of Alzheimer's disease. *Nutr Metab (Lond)*, 2.

- Wang, Y., Fang, Z., Zhang, Y., Xie, L., & Jiang, L. (2020). Efficacy of the ketogenic diet in patients with Dravet syndrome: A meta-analysis. *Seizure*, 81, 36-42.
- Wlodarek, D. (2019). Role of ketogenic diets in neurodegenerative diseases (Alzheimer's disease and Parkinson's disease). *Nutrients*, 11(1), 169.

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Health Power to the People: How Telemedicine Allows for Maximization of Patient Resources

ABSTRACT

With the recent rise in the use of telemedicine brought on by the Coronavirus, patients were encouraged to maximize the resources they have in order to make the most of their health. This forces us to question what benefits and drawbacks are associated with telemedicine. Previous research has shown that telemedicine use has increased because of COVID-19. Telemedicine has been used prior to this but the pandemic accelerated its use. Telemedicine has the potential to do much more for providers and patients with chronic conditions and can be expanded to provide a more affordable form of healthcare for those who can not afford the exorbitant costs normally associated with going to the doctor's or hospital. From my findings, it was determined that telemedicine should be used by patients with chronic conditions for the following reasons: it may be less costly, it can promote better medical outcomes, it allows providers to connect with patients far from them, it can be used to connect patients with providers who are more understanding of their condition and backgrounds, and it can promote a better provider-patient relationship with more frequent meetings. With this, there are certain risks that come with using telemedicine. Not everyone has internet access but CTACs (community technology access centers) can help relieve this issue. Also, lack of physical touch may also be an issue but technology such as virtual reality can help with this.

INTRODUCTION

Telemedicine is all the more relevant during our current COVID-19 quarantine. Telemedicine can include integrating videoconferencing, telephone calls, or even monitoring technology into a patient's treatment plan. According to Koonin (2020), in the first 3 months of 2020, there was a 50% increase in patients using telemedicine; compared to the first 3 months of 2019, there was a 154% increase. Although this use of telemedicine was brought on by a pandemic, patients are still actively working to maintain their health. Patients plagued by chron-

ic conditions question the benefits and drawbacks of telemedicine and traditional in-person appointments, specifically: which should they use to get the most out of their resources? Telemedicine is a useful resource as patients do not have to leave their homes to meet their providers. According to the American Hospital Association, as of 2019, approximately 76% of hospitals have integrated telemedicine into patient care. However, many patients and providers believe in-person appointments significantly impact provider-patient relations—internet access is not available to everyone. Ultimately, the patient chooses which form of intervention he or she would like, but it is important for them to make the most of their appointments and treatment.

Today, telemedicine is extremely useful in protecting patients and providers from coming into contact with COVID-19. Telemedicine allows patients to be monitored more frequently which can result in improved medical outcomes and decreased costs associated with readmission. It can connect patients and providers who are geographically isolated and consequently strengthen their relationships. However, it does raise the issue of the lack of internet connection in rural areas and the absence of non-verbal cues brought on by the lack of physical touch. Telemedicine offers more control and trust to the provider and consequently opens up the possibility of reduced costs, better outcomes, and a stronger provider-patient relationship so it should be used heavily by patients who have chronic medical conditions.

Medical paternalism concerns how much control the provider should exert over the patient. As Thomas Szasz and Marc Hollender (1958) observe, more control on the provider's end can be used to determine if patients experience a change in their medical outcomes. Telemedicine can potentially offer more control to the provider compared to in-person appointments. Furthermore, with telemedicine being so widely accessible to most patients in the United States, the issue of healthcare is seen as a commodity crisis. As Alfred Marshall suggests, with a larger supply of items, there is less demand. Similarly, a large supply of telemedicine services brought on by positive outcomes causes the demand to decrease, allowing people to take healthcare for granted. Telemedicine services and their use should expand, but they should be limited in use for only patients with chronic conditions.

TELEMEDICINE'S EFFECTS ON MEDICAL OUTCOMES AND COSTS

One of the primary concerns patients have when using telemedicine is the result of their treatment since they are so accustomed to in-person appointments. In patients who suffer from Chronic Heart Failure (CHF), telemedicine intervention has been shown to yield positive medical outcomes through frequent monitoring. In a systematic review of the effects of telemedicine use in different chronic conditions, it was found that “[h]eart failure hospitalizations in the intervention group were significantly lower at 3 months (45.7%) and at 6 months (47.8%) In addition, both heart failure-related hospital days and multiple re-admissions were significantly lower in the intervention group at 6 months” (Bashshur et al, 2014). Hospitalizations in patients with CHF decreased in the groups that had telemedicine intervention. Telemedicine services allow for more frequent monitoring of symptoms, so fewer emergency visits to the hospital reduce costs. Telemedicine also eliminates the stress of going to the doctor’s office, thereby making the appointment easier on the heart.

Along with improved outcomes, patients are not re-admitted as often, thus avoiding the high costs of medical bills. In a review focusing on attributes such as cost and mortality rates, in 75% of the studies chosen there “were reduced hospitalization and readmissions, improved mortality rates, increased cost-effectiveness, and improved health outcomes, improved quality of life and an increase in self-management of cardiovascular disease” (Kruse et al, 2017). Overall, patients who received intervention via telemedicine were not frequently readmitted, experienced lower mortality rates, and were able to have positive medical outcomes with a better understanding of how to care for their condition. A major part of providing treatment includes the provider educating the patient on their condition. Self-management is crucial for patients with chronic conditions because they cannot go to their provider for every inconvenience. This leads to low costs due to patients not going to their provider all the time and reduced readmission rates. Patients can also take advantage of telemedicine to schedule visits with their providers. While telemedicine is not free, patients are often reimbursed for using its services, thus, insurance companies do not charge as much compared to in-person visits. Being reimbursed is a plus for many patients and considering that telemedicine has shown to result in positive medical outcomes,

this leads to a larger supply of services. As telemedicine improves and becomes more abundant, there is a small demand, and it risks becoming a commodity. However, the reduced costs associated with fewer hospitalizations and readmissions hint that telemedicine services may not be as heavily commodified.

FORWARD TRIAGING IN STROKE PATIENTS

Compiling telemedicine services with techniques such as forward triaging in patients can result in positive medical outcomes as well and ultimately reduce costs. According to Kichloo, a currently practicing physician, forward triaging “is when patients are triaged before they ever visit an emergency department”. After diagnosis, the patient is then taken to the nearest emergency room where providers administer treatment. Many regional hospitals do not have a neurologist so Telestroke provides a stroke expert for patients. Telestroke is the use of videoconferencing technology, smartphones, and monitoring devices to keep up with a stroke patient via home-health systems or devices physically attached or implanted within the body. Services such as Telestroke used in combination with forwarding triaging techniques can promote positive medical outcomes in stroke patients. Telestroke has been shown to drastically “shorten the time from emergency department arrival to thrombolysis. Overall, thrombolysis was initiated within 60 minutes from arrival to the emergency room and was administered to 13% of the patients” (Bashshur et al, 2014). Stroke patients usually register first and then undergo a series of tests prior to receiving treatment. Monitoring patients via telemedicine decreases the time to administer thrombolysis, which is a procedure used to reduce the number of blood clots. Most of the time spent seeking treatment with traditional emergencies goes towards registration which includes a physical examination of the patient. If the patient is already being monitored, physicians are already aware of the patient’s condition. This reduction in time and control in terms of administering treatment is vital to stroke patients as every second they suffer from a stroke, the worse the effects are.

Telemedicine allows providers to see what is going on with their patients more frequently, and in the case that the patient experiences an emergency, and their vital signs deteriorate quickly, an ambulance can be called. The Rural Health Network Development (RHND) Program focuses on bringing healthcare services to patients in Rural America. Imple-

menting telehealth into emergency services has been one way to eliminate time constraints brought on by deteriorating conditions. According to the article, “Mobile Telehealth Units and Care Coordinators Improve Emergency Care Services for Rural Arizona Patients”:

Through the RHND grant funds, Timber Mesa Fire and Medical District installed telemedicine equipment in one ladder truck, four fire engines, and five ambulances. Each vehicle now has a mobile broadband router that allows for cellular connection... This feature makes it much easier for an ER physician to immediately access the information, make a diagnosis, recommend a transfer, or prepare the medical equipment necessary to treat the patient upon arrival. (Lukens, 2019)

Patients suffering from chronic conditions can benefit the most from combining forward triaging and telemedicine because it can help reduce the time that patients spend registering and allow physicians to dedicate the time saved for immediate treatment. Kichloo, Bashshur, and Lukens (2020) address the idea that forward triaging when combined with other telemedicine services can benefit stroke patients more than traditional methods as it allows physicians to optimize and, essentially, control the time they save from registering the patient to administering treatment.

PATIENT CARE IN RURAL AMERICA— THE IMPORTANCE OF DISTANCE

Many patients with chronic conditions, especially those in Rural America, fail to receive treatment due to geographic barriers. Native Americans, who live on rural reservations, are covered by the Indian Health System (IHS). It provides different types of medical care, but it has a small range for specialized care. Patients with chronic conditions are often not covered by IHS alone as it lacks staff in patients who have cancer, kidney disease, or diabetes that require individualized treatment plans. The system was improved by expanding the Affordable Care Act to provide Medicaid and more medical services to Native Americans. However, patients suffering from chronic conditions are still vulnerable to inadequate treatment because they can only travel to nearby IHS facilities. “Providers who are not culturally competent may react differently to assessments of pain from patients of ethnicities other than that of the pro-

vider. This increases the risk of inadequate pain treatment, as only 15 % of physicians working in IHS facilities self-identify as Native American,” (Kruse, 2016). Cultural differences result in different responses to pain and if the provider belongs to a different ethnicity than the patient, they might underestimate the patients’ pain tolerance and cause the condition to worsen. In an article by the American Association of Medical Colleges, ‘40% of first- and second-year medical students endorsed the belief that “black people’s skin is thicker than white people’s”’ (Sabin, 2020). Beliefs like this can potentially cause the provider to administer a treatment plan that continues to harm the patient. In a study done to analyze the overuse, underuse, and misuse of medical services in patients of different ethnicities, Kressin and Groeneveld (2015) found that “[i]nappropriate prescribing was more common overall among older black Americans than whites, as well as among all black and Hispanic versus white adults, and Hispanics were more likely than whites to revive psychotropics” (p. 123). Minority patients are not always paired with a provider who has an adequate understanding of their ethnicity. Consequently, this results in the provider prescribing a medication that harms the patient. Using telemedicine in facilities where the ethnicity of the majority of the patients is completely different than that of its providers can reduce the chance of improper pain management and improve medical outcomes as it can be used to connect patients with someone more understanding of their ethnicity. This accessibility risks telemedicine being seen as a commodity. As telemedicine becomes more prominent in healthcare, its users may reduce it to healthcare in general and thus, not view it as a luxury. Rather, it is seen as a service that could be bought and sold. However, providers and insurance companies who are more inclined to connect with patients despite geographical barriers emphasize that patient treatment comes first.

Areas such as the Midwest may require patients to travel far to reach their provider; however, those with chronic conditions are unlikely to frequently visit their providers because they may not have the means or ability to do so. Oftentimes, “[t]hose who are older, live in rural areas, have less education, and have more chronic conditions are less likely to have access to the internet than their counterparts” (Kichloo et al, 2020). Older individuals are more prone to having chronic conditions and may not have access to their providers, and barriers such as distance, age, education level, computer literacy, and lack of awareness perpetuate this issue. Not having access eventually becomes an excuse to not go to the

doctor's office, causing the patients' health to deteriorate. In cases like these, telemedicine is not the optimal choice for providing care because of the lack of accessibility. However, as technology advances and with a learning curve, patients in rural America have the potential to gain access to stable internet connections and increase computer literacy very soon. In a study done to evaluate providers' perspectives on integrating geriatric non-cancer patient care with telemedicine, providers found that "participants' lack of experience using telemedicine in CNCP management did not correlate with their willingness to try it. Almost all participants stated that they would be very willing to try a telemedicine device, such as a smartphone or tablet" (Mimi et al, 2014, p. 206-213). If providers are willing to utilize telemedicine, despite technical difficulties, patients are likely to do the same as their provider encourages its use. Eventually, there will be a point where the elderly consist of individuals who have had technology their entire life, implying better computer literacy rates.

BATTLING THE LACK OF INTERNET ACCESS

Digital deserts are areas where there are no internet providers, usually located in the Midwest, and they pose a serious threat to telemedicine. While there is not a definite number of how many digital deserts there are, they are an issue in rural areas, in general, beyond Native American communities; so, with a lack of internet access comes a lack of telemedicine use. "[A]lmost five million people and/or 2.2 million housing units had access to no provider. More worrisome, more than two-thirds of these unserved housing units were in rural areas" (Denson, 2019). The elderly tend to suffer from more chronic conditions and are one of the main age groups in these areas. Lack of internet access not only prevents them from receiving telemedicine services but also perpetuates the notion that older populations are not computer literate. The lack of internet access in the first place could possibly be due to the elderly not accepting this new change. Studies have found that "[w]here there is acceptance... patient access to the provider can be increased" (Kruse et al, 2016). Internet providers may not want to install access in communities where users are unwilling to utilize the services provided. This resistance could be caused by "not knowing how to get started, embarrassment when asking for help, lack of Internet terminal access and sense of personal irrelevance about the Internet" (Kalichman et al, 2002, p. 531). To encourage this positive change in geriatric patients, retirement living facilities could inte-

grate telemedicine services in their care for their residents, consequently increasing computer literacy. Patients who have chronic conditions such as heart disease should use telemedicine technologies such as sensors attached to smartphones or implanted devices to track vital signs. Medicaid could provide the technology required for each patient and the retirement home helps facilitate the use of the technology.

Also, encouraging internet use can increase the access people have to it. In a study focusing on increasing internet access in patients with HIV/AIDS, a chronic condition that faces stigma, intervention was used to encourage computer literacy, increase internet use, and eliminate the feeling of disconnection. According to the study, “CTACs [community technology access centers] supplement Internet services available in public libraries and other education-oriented settings to provide open access for persons who may otherwise not be exposed to the Internet” (Kalichman et al, 2002, p. 527). Several participants continued to use internet services such as email and health websites to maintain contact with their providers and educate themselves. Populations that are open to using communal services like CTACs are more likely to have better access in the future as internet companies notice that people are using their services. It is similar to a supply and demand issue: there is a large supply of services, but a low demand due to lack of computer literacy and the inability to accept new changes.

Furthermore, there are areas where there may be one internet provider; however, the quality of the internet is poor which impedes treatments. According to the article “A parched country: study shows digital deserts exist” by Connected Nation, “We have learned that quality of service improves if more than one provider overlaps in a census block” (Denson, 2019). More competition leads to more internet companies expanding their services which can ultimately lead to better internet quality. Patients with an unstable internet connection can experience glitches which thus leads to inaccurate results and a harmful treatment plan. Therefore, lack of internet access is a major issue for patients who wish to use telemedicine services but can be mended by using places such as CTACs, which create an appeal for companies to improve internet access and quality. Also, considering that some Medicare plans cover telemedicine services, providing internet access can be cost-effective for the government. Federal programs provide internet access to schools so programs such as Medicaid can provide internet to low-income individuals to increase telemedicine use. Recently, the government passed a bill

providing credits to the internet bill of low-income individuals. According to an article in the Washington Post, “Many of these Americans will see their Internet bills reduced by as much as \$50 a month in credits paid to their Internet service providers, and residents of tribal areas are eligible for even larger discounts” (Romm, 2021). While this is only a temporary fix to an issue that was perpetuated by COVID-19, integrating a plan like this to continually provide internet services, devices, or discounts in an era that revolves around technology can increase telemedicine use. Areas such as digital deserts do not heavily experience the commodification of telemedicine due to their lack of internet access, but then again, this takes the few telemedicine services that are available away from them. The installation of the internet in rural areas for telemedicine use can decrease costs for both patients and providers compared to normal visits so commodification may not be as prevalent.

TELEMEDICINE AND PROVIDER-PATIENT RELATIONS

In areas where there is adequate internet access, there is a resistance to change due to the notion that telemedicine will not provide the same or even more benefits as traditional in-person appointments, especially when it comes to the provider-patient relationship. While this relationship requires a conversation between the provider and patient, the provider has more control in terms of completing examinations and administering certain treatments. Patients often note that “contact via telecommunications lacks personal connection, limits interaction, and inhibits a sincere patient-provider relationship” (Kruse et al, 2016). People that are resistant to change are not open to using telemedicine because they believe patients and providers cannot connect personally and form a true relationship. If a patient already has a pre-existing relationship with their provider, studies have shown that telemedicine continues to foster the relationship, and because it allows providers and patients to meet more frequently, these relationships are most likely stronger than before in recurring patients. In fact, “[t]he patient-physician relationship is likely to evolve as physicians care for patients at greater distances, often in conjunction with remote clinicians. Such remote care may place a greater demand on ensuring personalized care” (Dorsey & Topol, 2016). Patients who are far from their providers have an even better chance of fostering their relationships because of more frequent telecommunication. Pro-

viders can use telemedicine services to frequently contact their patients suffering from chronic conditions, thus gaining a better understanding of their symptoms and creating a more effective and personalized course of treatment. Szasz and Hollander (1958) explained that “[m]utual participation designates a relationship in which the doctor-patient contract is essentially, that of a partnership. The physician helps the patient to help himself”. A healthcare model where both the provider and patient work together, while the provider is still in control of the tests and treatment plan, can maximize this relationship. Part of the provider’s job is to offer the education necessary to treat small symptoms found in chronic conditions so the patient can take care of himself.

Telemedicine is a powerful tool in connecting patients with providers who are far from them but have a better understanding of the role of ethnicity on their condition. In a case study, Hiratsuka compiled patient and physician testimonials on their perspectives on telemedicine. One physician said: “Years ago I used to encounter this all the time: doctors talked down to Natives, and, of course, a Native is not going to open up to someone that does not treat them good or talk with respect to them” (Hiratsuka et al, 2013). Telemedicine connects patients with providers they are comfortable with and who have a better understanding of the role their race plays in treatment effectiveness. Patients being comfortable with their providers allows them to be more open and further develop the patient-provider relationship. Also, people do not always feel the need to be formal with providers since social contact is restricted to a screen. While both groups are comfortable with each other, providers are reinstated with the power they have over patients as trust is gained. Although there is a clear difference in who has more control, the physician is still able to relate to the patient and create this relationship. Similar to how students have met with their professors virtually for the past year, as they meet more often through office hours or in class, their bond begins to strengthen as well. An understanding of each other allows telemedicine services to enhance and nurture this relationship through frequent contact.

LACK OF PHYSICAL TOUCH IMPEDES ON TREATMENT

With telemedicine use, comes the issue of providers not being able to physically touch their patients which can impede treatment effec-

tiveness. Providers lose control of one aspect of determining the patient's treatment plan. In-person appointments allow providers to notice the subtle and non-verbal signs of illness that patients are unlikely to notice. In an article with patient and provider testimonials on telemedicine use, one provider said, "I have problems with doing things like physical diagnosis over a television set ... My experience with video teleconferences is that there is always something lost when you do this. You lose some of the non-verbal signals ... it took me years to realize how important those are" (Hiratsuka et al, 2013). As soon as a physician meets their patient, they are able to tell so much about their patient because they are in view of the patient's full body and actions. With telemedicine, having technology glitches or blurriness in the camera can impede on the non-verbal signs that are crucial to effective treatments. With chronic conditions especially, one sign can hint at a more serious issue. Combined with a thorough in-person assessment every few months and other monitoring devices, this issue has the potential to be resolved very soon.

Also, geriatric patients tend to have dermatology issues that are worsened with poor internet quality. Considering that dermatologists require looking or touching the skin or affected area, "viewing only images and clinical notes appeared to result in inefficiency, with increased review appointments" (Brignell et al, 2007, p. 369 -374). Providers who treat dermal issues usually need to closely examine an area to look for spots, discoloration, or fluid. Telemedicine can prevent dermatologists from doing so as the patient might have bad camera quality which causes blurriness. Of course, patients always have the option to physically visit their provider, but sometimes, they may need to meet with their provider via telemedicine services. Doing so eliminates some of the anxiety of going to the doctor's office and patients can continually report concerns rather than saving them all for one visit. For patients who require physical touch, Virtual Reality (VR) technology can be used to bridge this gap. The patient wears a patch on their skin that conducts the touch of the provider. On the provider's end:

The patch wirelessly connects to a touchscreen interface (on a smartphone or tablet). When a user touches the touchscreen, that pattern of touch transmits to the patch. If the user draws an 'X' pattern on the touchscreen, for example, the devices produce a sensory pattern, simultaneously and in real-time, in the shape of an 'X' through the vibratory interface to the skin. (Morris, 2019)

VR technology is just one solution to the lack of physical touch providers experience with telemedicine use. In places where lots of patients suffer from chronic conditions, such as an assisted care home, VR technology may be more accessible due to the abundance of patients needing the technology, and residents can always share devices. More devices like this will enhance telemedicine services to the point where providers and patients can meet from home but feel as if they are face-to-face.

CONCLUSION

Telemedicine gained traction early in 2020 due to the pandemic and has the potential to completely change the way healthcare works. Telemedicine is improving different aspects of patient care in individuals suffering from chronic conditions. Positive medical outcomes are brought on by frequent monitoring, more control on the provider's end, and compiling telemedicine services with other techniques such as forward triaging. Ultimately, it is actually seen as a way to save money in a country like the United States where healthcare is extremely expensive. Saving time using forward triaging also plays a major role in treating patients with chronic conditions as these illnesses become worse if not treated in time. Patients who are far from medical facilities require more time which can be detrimental in the case of strokes. Individuals such as the elderly or Native Americans who live far from their providers have difficulty accessing medical resources. Telemedicine can allow them to connect to providers and specialists that they may not have access to or allow them to meet someone they are comfortable with. However, internet services are scarce in rural areas where the demographic is unlikely to use it which prevents telemedicine use. Encouraging internet use, especially for telemedicine services, can increase internet reach. With the proper access, telemedicine can be used as a way to enhance an already existing patient-provider relationship and it does not limit the provider's "touch" since technology can augment a reality where the two are face-to-face.

Telemedicine continues to improve every day and fills the gaps that are prominent in our current healthcare systems such as costs and accessibility. For many patients like Gabi Berner, telemedicine is ideal as frequent checkups require lots of time taken from their schedule. Berner had just started a new medication that was working well, and after living with ulcerative colitis for eight years, she knew what symptoms to

look out for. “It would all be for a quick five-minute appointment for my doctor to confirm I’m doing well” (Pascricha, 2021). Telemedicine will continue to expand and improve the medical outcomes of patients with chronic conditions. However, as it becomes more efficient, it will soon grow to have a large supply but low demand due to it being seen as a commodity like the rest of the American healthcare system. But, with reduced costs brought on by fewer readmissions and hospitalizations, it may not be as prominent as times prior to increased telemedicine use. As Marshall proposed, keeping goods at a reasonable price for buyers can maintain the demand. Similarly, limiting inflation of medical services can increase the demand for telemedicine services and ultimately, have a real impact on patients suffering from chronic conditions. The implications brought on by telemedicine have the potential to benefit patients with chronic conditions the most and lead to a better understanding of the conditions and their respective treatment options. Both patients and providers need to use and encourage telemedicine services in order to yield positive results in terms of outcomes, costs, provider-patient relationships, and even increased internet access for services besides telemedicine.

REFERENCES

- (2019). Fact Sheet: Telehealth. *American Hospital Association*. <https://www.aha.org/factsheet/telehealth>
- Bashshur, R. L., Shannon, G. W., Smith, B. R., et al. (2014). The empirical foundations of telemedicine interventions for chronic disease management. *Telemedicine journal and e-health: the official journal of the American Telemedicine Association*, 20(9), 769–800. <https://doi.org/10.1089/tmj.2014.9981>
- Brignell, M, Wootton, R, Gray, L. (2007). The application of telemedicine to geriatric medicine. *Age and Ageing*, 36: 369–374.
- Denson, J., (2019). A parched country: study shows digital deserts exist. *Connected Nation*. <https://connectednation.org/blog/2019/09/18/a-parched-country-study-shows-digital-deserts-exist/>
- Dorsey, E., Topol, E. (2016, July 14). State of Telehealth. *The New England Journal of Medicine*. <https://www.nejm-org.proxy.libraries.rutgers.edu/doi/10.1056/NEJMr1601705>
- Hiratsuka, V., Delafield, R., Starks, H., Ambrose, A. J., Mau, M. M. (2013, August 5). Patient and provider perspectives on using telemedicine for chronic disease management among Native Hawaiian and Alaska Native people. *The International Journal of Circumpolar Health*, 72 10.3402/ijch.v72i0.21401. <https://www.tandfonline.com/doi/full/10.3402/ijch.v72i0.21401>
- Kalichman, S.C., Weinhardt, L., Benotsch, E., Cherry, C. (2002). Closing the digital divide in HIV/AIDS care: development of a theory-based intervention to increase internet access. *AIDS Care*, 14:4, 523-537. <https://www-tandfonline-com.proxy.libraries.rutgers.edu/doi/pdf/10.1080/09540120208629670?needAccess=true>

- Kichloo, A., Albosta, M., Dettloff, K., et al. (2020). Telemedicine, the current COVID-19 pandemic and the future: a narrative review and perspectives moving forward in the USA. *Family medicine and community health*, 8(3), e000530. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7437610/>
- Koonin, L.M., Hoots, B., Tsang, C.A., et al. (October 2020). Trends in the Use of Telehealth During the Emergence of the COVID-19 Pandemic — United States, January–March 2020. *MMWR: Morbidity and Mortality Weekly Report*, 2020;69:1595–1599. <http://dx.doi.org/10.15585/mmwr.mm6943a3>
- Kressin, N.R., Groeneveld, P.W. (March 2015). Race/Ethnicity and Overuse of Care: A Systematic Review. *The Milbank Quarterly*. 93(1):112-138. https://www-jstor-org.proxy.libraries.rutgers.edu/stable/24369872?seq=1#metadata_info_tab_contents
- Kruse, C. S., Bouffard, S., Dougherty, M., & Parro, J. S. (2016). Telemedicine Use in Rural Native American Communities in the Era of the ACA: a Systematic Literature Review. *Journal of medical systems*, 40(6), 145. <https://doi.org/10.1007/s10916-016-0503-8>
- Kruse, C. S., Soma, M., Pulluri, D., Nemali, N. T, Brooks, M. (2017, February 1). The effectiveness of telemedicine in the management of chronic heart disease- a systematic review. *JRSM Open*. 8(3). <https://doi.org/10.1177/2054270416681747>
- Lukens, Jenn. (2019, August 7). Mobile Telehealth Units and Care Coordinators Improve Emergency Care Services for Rural Arizona Patients. *The Rural Health Information Hub*. <https://www.ruralhealthinfo.org/rural-monitor/improving-rural-emergency-care/>
- Mimi, L., Richardson, J.E, Granieri, E., Reid, M. C. (2014). Novel telemedicine technologies in geriatric chronic non-cancer pain: primary care providers' perspectives. *Pain Med*, 15:206-213
- Mobile Telehealth Units and Care Coordinators Improve Emergency Care Services for Rural Arizona Patients.
- Morris, A., (2019) 'Epidermal VR' gives technology a human touch. *Northwestern NOW*. <https://news.northwestern.edu/stories/2019/11/epidermal-vr-gives-technology-a-human-touch/>
- (n.d). Alfred Marshall. (1842-1924) *The Library of Economics and Liberty*. <https://www.econlib.org/library/Enc/bios/Marshall.html>
- (November 2020). Telestroke (stroke telemedicine). *MayoClinic*. <https://www.mayoclinic.org/tests-procedures/stroke-and-telemedicine/about/pac-203950>
- Pasricha, Trisha. (2021) "Telemedicine - a Boon for Many in the Pandemic - Threatened with Cutbacks." *The Washington Post*, WP Company, 4 Sept. 2021, https://www.washingtonpost.com/health/telehealth-remote-medicine-cutbacks/2021/09/03/40b2f41c-099b-11ec-a6dd-296ba7fb2dce_story.html.
- Romm, Tony. (2021, Feb 26). Millions of low-income Americans to get up to \$50 subsidies for their monthly Internet bills under newly finalized U.S. program. *The Washington Post*. <https://www.washingtonpost.com/technology/2021/02/26/broadband-internet-subsidies-coronavirus/>
- Sabin, Janice A. "How We Fail Black Patients in Pain." AAMC, 6 Jan. 2020, <https://www.aamc.org/news-insights/how-we-fail-black-patients-pain>
- Szasz, T.S., Knoff, W.F., Hollender, M.H. (1958). The Doctor- Patient Relationship and its Historical Context. *SUNY Upstate Medical University*. <https://www.upstate.edu/psych/pdf/szasz/doctor-patient-relation.pdf>

Jenna Gannon

Evaluating Perfectionism, Stress, and Rumination: Why Some Cannot Cope with Criticism and Failure

ABSTRACT

Perfectionism is a personality trait that involves setting unrealistic standards for oneself and being overly self-critical. Research has shown that these characteristics lead to maladaptive effects: increased distress, rumination, and even depression. Nevertheless, research has shown that there are also adaptive effects of perfectionism, such as self-efficacy and pushing oneself to optimal performance. However, it remains unknown how exactly perfectionism becomes maladaptive. This paper found that perfectionism can develop from being an adaptive personality trait to a maladaptive one, beginning with the internalization of a perfectionists' unrealistic expectations, and eventually leading to increased distress, negative feelings, and self-criticism. Consequently, the working memory becomes continuously filled with negative thoughts and feelings, as per the stress generation model of perfectionism. In line with the Perfectionism Cognition Theory (PCT), the perfectionist begins to ruminate over these negative thoughts, gets stuck in this loop of self-blame and criticism, and eventually does not feel confident enough to handle future stressful situations; this engenders the onset of depressive symptoms. The similarities between co-rumination (rumination with peers instead of alone) and rumination illustrate that even though co-rumination involves social support, it is ultimately not as helpful a solution as one might expect.

INTRODUCTION

Millions of people around the world likely identify themselves as perfectionists. Perfectionism is a personality style that refers to striving for exceedingly high standards and holding overly critical evaluations of one's behavior (Asseraf & Vaillancourt, 2015). Research has shown both that perfectionism has adaptive aspects, such as achievement motivation and self-efficacy, as well as asserted that perfectionists are more likely

to be overthinkers, causing increased distress and making them more vulnerable to rumination and depression (Xie et al., 2019, p. 302). Rumination is also a risk factor for the onset of psychological disorders, such as stress and depression (Connolly & Alloy, 2017; Michl et al., 2013; Quinn & Joormann, 2015a). Rumination is a common but ultimately detrimental way of thinking in which people repetitively focus on the same negative thoughts. It is not fully known, however, what connects perfectionism and stress to rumination. This unknown prompts the question: how does perfectionism become maladaptive? Furthermore, what makes a perfectionist more likely to ruminate and be more vulnerable to stress-related psychological disorders? The goal of the forthcoming analysis is to make people more aware of the risks that come with perfectionism: so that they can recognize when they are perceiving stress negatively and be less vulnerable to rumination. Therefore, it is also essential to decipher the signals of rumination and depression, such as withdrawal and avoidance, so they do not continue.

Jill Adelson in “A ‘Perfect’ Case Study: Perfectionism in Academically Talented Fourth Graders” declares that young children who sometimes are perfectionistic and dwell on their mistakes can later experience increased distress, anxiety, and procrastination. Negative affectivity is a common personality variable in perfectionists, due to feeling insecurity over their mistakes and the pressure to be perfect. Executive control is a term used to describe cognitive processes that are “associated with the ability to effortfully and effectively cope with stressors” (Quinn & Joormann, 2015b, p. 629). Perseverative cognition occurs when people are unable to change their negative thoughts and think more positively (Xie et al., 2019). Perfectionism becomes maladaptive when perfectionists internalize the expectations established by themselves or others; this causes a high negative affectivity, leading to low self-worth and increased distress when they fail or receive criticism. The perfectionist then remembers these times of failure or criticism and is less able to use executive control to adopt healthier reactions to stress; these factors eventually lead to perseverative cognition and contribute to prolonged rumination. Consequently, perfectionists have difficulty forgiving themselves for failure and feel incapable of succeeding: which prevents them from moving forward and instigates the development of depression.

I will begin this paper by introducing the relationship between perfectionists’ internalized expectations and their negative affectivity after criticism or failure. Using the stress generation model of perfec-

tionism, I will then connect perfectionism to perceived stress and the way that prolonged negative affectivity stimulates the activation of past, negative memories in one's working memory. In the section following, I will illustrate how one's biased memory shows a low executive control and perseverative cognition. Then, I will use the Perfectionism Cognition Theory (PCT) to show the association between perfectionism and rumination. Afterwards, brooding rumination is strengthened and the onset of depression, a stress-related internalized psychological disorder, becomes more apparent. Finally, I will contrast rumination with co-rumination to show that even though co-rumination can alleviate stress due to sharing one's stressors with others (i.e. through socialization), it is maladaptive and no different than brooding rumination: it only focuses on the problem instead of how best to solve it.

INTERNALIZATION OF EXPECTATIONS, DISTRESS, AND NEGATIVE AFFECTIVITY

Self-oriented and socially prescribed perfectionists often internalize the expectations imposed by themselves or others, which can lead to feelings of worthlessness and distress if they fail to meet those expectations. Self-oriented perfectionism (SOP) refers to how a person strives to be perfect and demands perfection of themselves. Socially prescribed perfectionism (SPP) refers to a person's belief that being perfect is important to others around them. Another type of perfectionism, other-oriented perfectionism (OOP), describes how one expects others to be perfect (Asseraf & Vaillancourt, 2015). This paper, however, will only focus on SOP and SPP due to their shared characteristic of holding oneself to high standards. According to the stress generation model of perfectionism, which postulates that perfectionistic demands generate stress, "people high in perfectionism are prone to interpreting minor setbacks as major stressors and tend to anticipate future events as stressful" (Smith et al., 2020, p. 2). In Adelson's (2007) case study, a fourth-grade student named Sherman expected to remember every detail about different people and events while playing a social studies review game, and would become very frustrated if he had trouble, pounding on his head to try and remember (p. 15). Sherman interpreted this minor problem as major and could not accept that he did not remember everything that he expected to remember. Later, "This attitude affected Sherman's participation in math games. He expected to solve every puzzle and to solve it immediately, or

he would become discouraged and upset with himself” (Adelson, 2007, p. 15). Sherman, who falls under SOP, internalized his expectations from the review game and this led to increased stress and poor performance in math games. His difficulty remembering details in his review game caused him to anticipate the math games as stressful, leading him to criticize himself when he could not solve every puzzle.

Perfectionists tend to have a high negative affectivity and react to criticism and failure negatively because their internalized expectations lead them to believe that they will succeed. Negative affectivity is especially prevalent in SOP and SPP because of self-criticism. People who have high negative affectivity often experience negative emotions and show higher levels of stress, anxiety, and poor self-esteem. Perfectionism is associated with shame, guilt, failure, and low self-esteem: showing the connection between perfectionism and negative affectivity (Asseraf & Vaillancourt, 2015, p. 895). Xie et al. (2019) explain that “Perfectionists tend to perceive constant pressure in their life, focus on negative events, [and] fear being criticised” (p. 308). Because perfectionists have such high expectations for themselves, they put themselves under a lot of pressure in order to meet those expectations. In Adelson’s (2007) case study, a student named Cho worked very hard to earn top grades, but she received a low A for one of her classes nevertheless (p. 15). Cho was “distraught about ‘not being good at reading’ and did extra work each weekend to try to improve. Her parents were also worried about her reading ability and would request extra work for Cho (Adelson, 2007, p. 15). Cho is therefore both a self-oriented and socially prescribed perfectionist: she expected to earn high As and her parents expected this of her too. Because she internalized these expectations imposed upon her, she became distraught when she got an A minus; Cho was only focusing on how to increase her low A, because of the pressure she put on herself as well as the pressure of her parents who also expected high As. Cho’s distress after she did not receive an A shows her negative affectivity. It is likely that Cho also feared being criticized by her parents for her low A because they were already worried about her reading ability. Internalizing the expectations of oneself or of others, feeling unable to meet them, or fearful of their criticism “are related to feelings of worthlessness and self-criticism” (Asseraf & Vaillancourt, 201, p. 896). Perfectionists are afraid that when they receive criticism or fail, they will never feel like they are good enough: which perpetuates low self-esteem and negative affectivity.

ACTIVATION OF PAST NEGATIVE EVENTS IN WORKING MEMORY PROLONGS DISTRESS

When perfectionists are criticized or fail, they have difficulty removing the subsequent negative thoughts from their mindset because these thoughts are brought into their working memory, which sustains their negative affect and distress. Researchers Quinn and Joormann (2015a) explained in their study that “Following a stressful event, negative mood ensues and negative cognitions are activated in working memory” (p. 528). It is common for a perfectionist to immediately lose hope about managing the stressful event well because they immediately remember other times in the past when they failed to do so. In a case study, a 27-year-old woman named Azure started therapy for her perfectionism:

One challenging aspect of treatment which emerged was Azure’s harsh relationship toward herself. This often manifested as fixating on self-criticism over perceived mistakes and limitations. She tended to lapse into negative self-dialogue even when asked to focus on positive or neutral aspects of her experience, making it difficult for her to explore her genuine emotional reactions or realistically appraise her strengths. (Hewitt et al., 2020, p. 2037)

Remembering times when she had messed up allowed Azure to easily fall into self-criticism, and let it interfere with her ability to focus on her strengths while in therapy. Keeping her self-criticism in her working memory allowed her to extend it into the present: ultimately maintaining her negative affectivity as she continued to berate herself. Remembering her mistakes was very discouraging, because this made Azure feel less confident in her ability to overcome future stressful events and perpetuated her feelings of low self-worth.

When negative cognitions are constantly activated, a perfectionist is also constantly reminded of their negative feelings and thoughts: this not only continues their negative affect but also prolongs distress. In accordance with the stress generation model, Smith et al. (2020) state that “people high in perfectionistic concerns appear to think, feel, and behave in ways that increase the likelihood of experiencing and eliciting stressful events” (p. 9). Because perfectionists set exceedingly high standards for themselves, they do not realize that they are inadvertently adding stress into their lives too. As they continuously try to meet their expectations, they do not realize that they never will do so because their expectations

are impossible to meet. Likewise, Xie et al. (2019) describe that “Repetitive thoughts make individuals dwell on their problems rather than solve them or reduce the difficulties they face, which causes a high level of perceived stress” (p. 302). In a case study on perfectionistic and academically gifted fourth-graders, a student named Jade shared how she was going to create her assigned project, but she had not started working on it yet and there were only a few days before it was due (Adelson, 2007). Jade had procrastinated on the project, even though she had an intricate vision of it, because she was intimidated by it and feared that it would not turn out the way she imagined. Jade and other procrastinating perfectionists “have a perfect vision in their mind, but the fear of their inability to achieve that vision causes them to procrastinate, paralyzing them from taking action” (Adelson, 2007, p. 18). By expecting perfection in her project, she became so overwhelmed that she procrastinated, which likely caused her to underperform. Jade saw the project as daunting because her perfectionistic concerns made her stress and overestimate the difficulty of the project. Procrastinating on her project also led Jade to dwell on it rather than try to confront it directly or try to break up the task into smaller components. Likewise, negative cognitions in working memory can make perfectionists think not only that they are incapable of resolving their problems but even that their problems cannot be resolved at all.

WHAT TRIGGERS RUMINATION AND DEPRESSION

When a perfectionist is constantly reminded of their negative thoughts and experiences increased stress due to this, they begin to lose confidence in being able to handle stressors; this is a part of their low executive control and strong perseverative cognition. Eventually this leads to brooding rumination that keeps them from moving forward and increases their chances of depressive symptoms. Quinn and Joormann (2015a) explain that executive control is involved in “the ability to inhibit automatic responses, update the contents of working memory, and flexibly shift behavior” (p. 522). In the absence of executive control, the mind gives in to the accumulation of memories of personal failure or criticism, which impair the perfectionist’s ability to adapt to the current stressor. In Adelson’s (2007) case study, a fourth-grader named Carlos worked meticulously on a drawing for several weeks in art class. However, he redid the drawing several times because he believed that it was not precise enough and constantly asked his art teacher for reassurance. Carlos’ behavior

reflects low executive control because he could not help but remember each time he had messed up and then became afraid he was going to mess up again. He continued to become caught in a cycle of negative emotions: not learning how to discern past stressful events as separate from current ones by using executive control (to help him realize that not all situations should be perceived as stressful). Xie et al. (2019) introduce the concept of perseverative cognition: referring to this inability to change one's negative thoughts and ultimately perseverating with them. Xie et al. (2019) explain that perseverative cognition can "prolong negative affect as individuals tend to interpret their life events in an irrational and negative way" (p. 302). The mistakes that Carlos made in his past drawings stayed in his mindset. As a result, he was unable to believe that his most recent drawing was good and finally be proud of it. Carlos' perseverative cognition prolonged his negative affect because his mind was filled with his previous failed drawings, so he continued to interpret each new drawing as a failure instead of as being acceptable. Perfectionists like Carlos may eventually "become disappointed in their own work and give up trying" (Adelson, 2007, p. 17). A perfectionist starting to feel that they cannot ever improve their work and ultimately giving up indicates that they have lost their confidence and may be unable to move on from their past failures. Carlos did not learn from his past drawing mistakes how to improve upon them and did not have sufficient executive control to help adjust his reactions to subsequent drawings. Using executive control to manage his reaction would have allowed him to accept a drawing and cope with the stress of trying to draw a good picture. Having his mind intervene to help him cope with this stressor would have modified his thoughts to help him appreciate and acknowledge his hard work, instead of only focusing on the end result. Being unable to move forward and learn from past failures stimulates the beginning of brooding rumination.

Persistent self-criticism, self-blame, low executive control, and strong perseverative cognition during a stressful event causes brooding rumination and depressive symptoms; under these conditions, the perfectionist is always conscious of their negative thoughts, emotions, and memories. As explained by Quinn and Joormann (2015b), brooding "is characterized by a passive focus on one's internal state. In contrast to reflection, brooding does not lead to effective problem solving; rather, brooding leads to inaction and maintenance of negative emotions" (p. 629). When a perfectionist repetitively focuses only on the consequences of stressful life events and keeps these thoughts to themselves, they main-

tain them in their mind and are later led to believe that they will always be unable to overcome stressors.

This is what occurred with Carlos. He fixated on the times he had messed up his drawing and lost confidence in believing that his subsequent drawings could be better, always starting over and asking his art teacher for reassurance. According to the Perfectionism Cognition Theory (PCT), both self-oriented perfectionists (SOP) and socially prescribed perfectionists (SPP) are correlated with rumination (Xie et al. 2019, p. 301). Both SOP and SPP tend to self-criticize and self-blame, and their negative affectivity causes these feelings to continue, leading to an inability to focus on where their strengths lie. By fixating on his past failures, Carlos increases his chances of brooding over them; additionally, he maintained his negative emotions and did not use problem-solving to combat his dissatisfaction with the new drawings. Responding to criticism and failure by self-criticizing, self-blaming, and eventually ruminating highlights “the importance of social environmental experiences in shaping responses to distress and the role of rumination as a mechanism underlying stress-related internalizing psychopathology” (Michl et al., p. 346). Perfectionists stay in a brooding, ruminative mindset that puts them at risk for developing a stress-related, internalized psychological disorder, especially depression.

Low executive control and strong perseverative cognition also trigger co-rumination because it is very similar to rumination; co-rumination describes rumination with peer(s) instead of alone. Hypothetically, this could combine the beneficial elements that come with receiving social support, such as relieving stress by sharing stressors with trusted friends, but co-rumination is maladaptive. Hruska et al. (2015) and Rose et al. (2017) explain that co-rumination is a negative focus on problems, insinuating a present negative affectivity, and that subsequently dwelling on these problems negatively will also influence one’s own affectivity (Hruska et al., 2015, p. 373; Rose et al., 2017, p. 986). Hruska et al. (2015) also describe that co-rumination allows for continuous thinking about one’s problems and “may lead an individual to in the moment feel sadness, anxiety or hostility, as a result of rehashing details of his/her problems” (p. 373). Co-rumination causes negative cognitions and mood afterward because one is focusing on negative information, no different than the effects of rumination when alone. Co-rumination also allows for one to be constantly aware of their stressors because they have shared them with others. This highlights the role of perseverative cognition in

co-rumination: co-ruminating with peers keeps one's stressors in their mind because they are discussing them with others. Co-rumination also illustrates low executive control because one remains swept up in negative emotions, even when friends offer new perspectives on handling the stressor.

An observational study by Rose et al. (2014) found the following:

When an adolescent heard a friend say something supportive ... offer information or an opinion, or give advice, he or she replied with another own-problem statement. In other words, co-ruminating friends responded to each other with engaged responses that extended problem talk. (Rose et al., 2014, p. 2207)

Even though a friend may be supportive, co-ruminating still continues feelings of sadness and extends the problem talk, which keeps one thinking that the current situation is stressful. When this happens, co-rumination "not only could increase perceptions of stress but also could interfere with effective problem solving, leading to additional stressful experiences" (Rose et al., 2017, p. 986). These findings suggest that talking about one's problems with their peers does not relieve their stress; rather, it is exacerbated because they are reminded of their problems and are not currently trying to solve them, showing passivity, an element of brooding rumination.

COUNTERARGUMENT: HOPE AND MINDFULNESS

Even though perfectionism is associated with a higher incidence of stress and depressive symptoms, ruminating while being able to generate a positive affectivity in oneself demonstrates that perfectionism can be adaptive. Rumination is also divided into a reflective subtype; reflective rumination occurs when someone focuses inward on their negativity with the intent to solve their problems (Quinn & Joormann, 2015b, p. 629). In addition, Stewart et al. (2019) explain that reflection refers to focusing on "neutral or positive content, non-judgmentally" (p. 2). This demonstrates that a perfectionist who reflects is able to differentiate between types of memories, and that having strong executive control is crucial to prevent brooding rumination and allow for reflection. When a perfectionist reflects and intends to solve their problems, it shows that they have hope. Geiger and Kwon (2010) describe that hope has two components: agency and pathways. The agency component of hope helps a person become

motivated to achieve their goals, and the pathways component helps a person create the plan to achieve those goals (Geiger & Kwon, 2010). In the case study on perfectionistic fourth-graders, a student named Judy challenged herself to an independent study project. She presented her research to multiple groups, which gave her the opportunity to learn from her experience and edit her presentation (Adelson, 2007, p. 20). Afterward, “She reflected ... about what she learned from the experience ... and what she will do differently the next time she attempts a similar project” (Adelson, 2007, p. 20). Judy remembered her mistakes, but instead of passively focusing on them, she learned from her experiences and used her memory to her advantage: becoming more motivated to create a new plan of things to try differently to improve her next project. Judy reflected on her experience and used both components of hope in order to channel her perfectionism in an adaptive and healthy manner.

Mindfulness can also help a perfectionist build positive affectivity because it eliminates judgment and expectations to mitigate rumination and depressive symptoms. Mindfulness is described as focusing on the present experience and being non-judgmental of inner experiences, such as one’s thoughts and feelings (Short & Mazmanian, 2013, p. 717). Mindfulness can offset the beginnings of rumination: with it, a perfectionist focuses on the present instead of the past, is then less likely to find fault in themselves (eliminating judgment), and eliminates excessive expectations for themselves (which would be potential for disappointment). Short and Mazmanian (2013) suggest that “being aware, being non-judgmental, and not reacting to one’s inner experiences are more relevant to negative repetitive thoughts and distress, than simple observation and description of stimuli” (p. 720). Regarding the student Judy, she not only utilized reflection and hope to make her perfectionism adaptive, but she was also able to stay in the present moment and prevent self-judgment. Although she sometimes could not help “agonizing over an A- rather than an A, Judy has learned to focus on effort, enjoy the process of learning, and accept new challenges” (Adelson, 2007, p. 20). Instead of seeing her A minus as inferior to an A, Judy focused on the present: praising the effort she put in to get that A minus and not judging herself for falling short of an A. She was able to recognize the importance of compromise: that perfection should not undermine an acceptable performance, the end result is less important than the learning process, and challenges can be overcome, especially if they are seen as new opportunities.

CONCLUSION

While perfectionism has been posited as being an adaptive trait—because perfectionists do not underachieve and always try their best—it becomes maladaptive when perfectionists demand absolute perfection of themselves and are unable to accept criticism and failure. By internalizing high expectations, the perfectionist begins to feel increased distress and low self-worth when they are criticized or fail. The stress generation model illustrates that perfectionists interpret minor obstacles as severe and even anticipate that future events will be stressful. As past stressful events return into their working memory again and remind the perfectionist of their negative thoughts, so are their negative cognitions activated continuously, potentially causing them low performance during a new stressful event. When these negative cognitions are activated, the perfectionist is unable to use executive control to dismiss the negative memories from their mindset; furthermore, this also prevents the perfectionist from learning how to distinguish past stressful events from current ones, and realizing that not all situations should be perceived as stressful. The perfectionist feels disappointed in themselves and is unable to change their negative thinking and be motivated to handle the stressful situation, reflecting preservative cognition. This can cause the perfectionist to give up trying, become passive, and begin brooding. As presented in the Perfectionism Cognition Theory, rumination is an aspect seen in both SOP and SPP. The longer brooding rumination occurs, the more likely it is to lead to a stress-related, internalized psychological disorder, namely depression. Because depression is internalized, the perfectionist keeps their self-criticism, self-blame, and low self-worth to themselves and may not seek help. This is especially true if others have high expectations for them, as seen in SPP. Even though perfectionism has adaptive aspects, its maladaptive outcomes are more pertinent and significant for consideration: every person inevitably faces stressful situations in life, and perfectionists are more vulnerable to respond to these with pessimism and rumination. It is imperative for perfectionists to learn that past failure and criticism do not imply that current stressful events will end in the same way. Instead, criticism and failure can give them a chance to accept their mistakes and see them as learning opportunities. Learning how to instill reflective rumination with hope and mindfulness, either by oneself or with therapy, can help a perfectionist experience their perfectionism in a healthy way. After receiving criticism or failing, they can instead become more self-motivat-

ed and resilient to try again: with a new plan, perspective, and mindset, so that they can acknowledge the value of compromise, and not let high expectations or perfection be the enemy of satisfactory performance.

REFERENCES

- Adelson, J. L. (2007). A “perfect” case study: Perfectionism in academically talented fourth graders. *Gifted Child Today*, 30(4), 14–20. <https://doi.org/10.4219/gct-2007-490>
- Asseraf, M., & Vaillancourt, T. (2015). Longitudinal links between perfectionism and depression in children. *Research on Child and Adolescent Psychopathology*, 43(5), 895–908. <https://doi.org/10.1007/s10802-014-9947-9>
- Connolly, S. L., & Alloy, L. B. (2017). Rumination interacts with life stress to predict depressive symptoms: An ecological momentary assessment study. *Behaviour Research and Therapy*, 97, 86–95. <https://doi.org/10.1016/j.brat.2017.07.006>
- Geiger, K. A., & Kwon, P. (2010). Rumination and depressive symptoms: Evidence for the moderating role of hope. *Personality and Individual Differences*, 49(5), 391–395. <https://doi.org/10.1016/j.paid.2010.04.004>
- Hewitt, P. L., Mikail, S. F., Dang, S. S., Kealy, D., & Flett, G. L. (2020). Dynamic-Relational treatment of perfectionism: An illustrative case study. *Journal of Clinical Psychology*, 76(11), 2028–2040. <https://doi.org/10.1002/jclp.23040>
- Hruska, L. C., Zelic, K. J., Dickson, K. S., & Ciesla, J. A. (2017). Adolescents’ co-rumination and stress predict affective changes in a daily-diary paradigm. *International Journal of Psychology*, 52(5), 372–380. <https://doi.org/10.1002/ijop.12227>
- Michl, L. C., McLaughlin, K. A., Shepherd, K., & Nolen-Hoeksema, S. (2013). Rumination as a mechanism linking stressful life events to symptoms of depression and anxiety: Longitudinal evidence in early adolescents and adults. *Journal of Abnormal Psychology*, 122(2), 339–352. <https://doi.org/10.1037/a0031994>
- Quinn, M. E., & Joormann, J. (2015a). Control when it counts: Change in executive control under stress predicts depression symptoms. *Emotion* (Washington, D.C.), 15(4), 522–530. <https://doi.org/10.1037/emo0000089>
- Quinn, M. E., & Joormann, J. (2015b). Stress-Induced changes in executive control are associated with depression symptoms: Examining the role of rumination. *Clinical Psychological Science*, 3(4), 628–636. <https://doi.org/10.1177/2167702614563930>
- Rose, A. J., Glick, G. C., Smith, R. L., Schwartz-Mette, R. A., & Borowski, S. K. (2017). Co-Rumination exacerbates stress generation among adolescents with depressive symptoms. *Research on Child and Adolescent Psychopathology*, 45(5), 985–995. <https://doi.org/10.1007/s10802-016-0205-1>
- Rose, A. J., Schwartz-Mette, R. A., Glick, G. C., Smith, R. L., & Luebbe, A. M. (2014). An observational study of co-rumination in adolescent friendships. *Developmental Psychology*, 50(9), 2199–2209. <https://doi.org/10.1037/a0037465>
- Short, M. M., & Mazmanian, D. (2013). Perfectionism and negative repetitive thoughts: Examining a multiple mediator model in relation to mindfulness. *Personality and Individual Differences*, 55(6), 716–721. <https://doi.org/10.1016/j.paid.2013.05.026>
- Smith, M. M., Sherry, S. B., Vidovic, V., Hewitt, P. L., & Flett, G. L. (2020). Why does perfectionism confer risk for depressive symptoms? A meta-analytic test of the mediating role of stress and social disconnection. *Journal of Research in Personality*, 86, 103954. <https://doi.org/10.1016/j.jrp.2020.103954>

- Stewart, T. M., Hunter, S. C., & Rhodes, S. M. (2019). Reflective pondering is associated with executive control for emotional information: An adolescent prospective study. *Journal of Behavior Therapy and Experimental Psychiatry*, 65, 101486. <https://doi.org/10.1016/j.jbtep.2019.101486>
- Xie, Y., Kong, Y., Yang, J., & Chen, F. (2019). Perfectionism, worry, rumination, and distress: A meta-analysis of the evidence for the perfectionism cognition theory. *Personality and Individual Differences*, 139, 301–312. <https://doi.org/10.1016/j.paid.2018.11.028>

Angel Thomas

Cultural Appropriation in Fashion: The History, Reality, and Relevance

ABSTRACT

Fashion is and has been one of the most prominent forms of self-expression as individuals showcase their cultural identity through how they present themselves. The topic of cultural appropriation in the fashion industry has been of prominent focus in recent decades due to the ongoing processes of decolonization and globalization. This research paper considers why the appropriation of traditional fashion elements is an issue. Through a postcolonial theory substantiated analysis, this paper addresses the history of cultural appropriation, the reality of the issue with consideration to identity, and its continuing relevance and importance alongside the debate of appropriation and appreciation. Overall, the research determines that cultural appropriation of traditional fashion styles is an important issue as it negatively impacts cultural identity, misrepresents cultures, and further reinforces inaccurate colonial attitudes.

CULTURAL APPROPRIATION IN FASHION: THE HISTORY, REALITY, AND RELEVANCE

Fashion is a form of cultural identity. This identity is showcased through the clothes and accessories individuals adorn, representing their beliefs, traditions, personalities, professions, and socioeconomic status. Cultural identity is an abstract topic composed of and influenced by a myriad of different factors. Since culture is dynamic and cannot be regulated, the topic of cultural appropriation is highly debated in relation to cultural identity. Cultural appropriation can be generally defined as the taking of a cultural element by members of another culture without the proper consent, attribution, or compensation. In terms of fashion, cultural appropriation is seen when designers and trends borrow elements such as fabrics, patterns, and accessories that are representative of cultural fashion and misuse it or use it without the proper acknowledgement. Cultural appropriation has become a highly debated topic within the past century as decolonization and globalization have revolutionized the concepts of culture and the role of fashion. By analyzing various sources,

this research paper will try to answer the question: why is the cultural appropriation of traditional fashion elements and styles an issue? To better understand the topic of cultural appropriation in fashion, it is important to define some terms in context. *Culture* can be generally defined as the customs, arts, practices, social institutions, and achievements of a particular nation, people, or another social group. Fashion in this perspective is a form of culture, as fashion is a form of art. The term *appropriation* can be defined as the action of taking something for one's own use, typically without the owner's permission. With this context, in a scholarly community, *cultural appropriation* is often defined as "the taking, by a member of a dominant culture, of a cultural element from a minority culture, without consent, attribution or compensation" (Vézina 1). Cultural appropriation raises the question of who owns culture and calls for further examination of the power dynamics present in cultural interactions. Evidently, culture is something that can not directly be owned or constricted into certain specifications; while it has a history and purpose, culture and cultural ideas are continuously changing and modernizing to adhere to the new perspectives and influences. Hence, there is much ambiguity in the discussions surrounding this topic of culture and ownership. The complexities and nuances of the ever changing idea of culture results in polarized and subjective perspectives in the discussion of this topic.

A theoretical framework will be utilized to analyze this research and to form these concepts. Tanisha C. Ford's claim that fashion is a powerful tool in forming cultural identity will be analyzed to understand the consequences cultural appropriation can have on cultural identity. In the article "SNCC Women, Denim, and the Politics of Dress.," Ford explores how civil rights activists from the Student Nonviolent Coordinating Committee (SNCC) used denim clothing in the 1960's as a political marker to symbolize their identity. The SNCC women wore denim clothing to represent their alliance alongside black sharecroppers and the poor working class. By doing so, this also allowed them to further their cause as a group working for social justice. She furthers this analysis by explicitly discussing the symbolic meaning behind the fashion choices of the SNCC women and how there was substantially more to the clothing. Ford recognizes the power of fashion regarding identity construction when she states, "Clothing had the power to convey meaning about ... personal and political beliefs as well as to establish a community with a collective ethos," (Ford 657). Fashion, in this perspective, is not just a product for

consumers to buy; instead, it is a tool and symbol used by individuals to convey a more profound message. Hence, understanding the cultural and historical context of these fashion items is necessary to determine the significance of cultural fashion and understand why cultural appropriation is an issue.

Another theoretical frame that will be used to analyze this research is the ideas of postcolonial theory and its impact on fashion. The study of postcolonial theory focuses on understanding and analyzing the historical, political, economic, social, and aesthetic impact of European colonialism. This theory explores how the cultural legacy of colonialism and imperialism has impacted the modern identity, which is now a byproduct of multicultural interactions. The ideas of Edward Said, a professor of literature at Columbia University, presented in the book *Orientalism* will be further analyzed to frame this concept. In his book, Said defines Orientalism, describes how this concept was created historically to serve imperialist agendas, and explains how Orientalism is used presently. One way he defines Orientalism is as the point of view individuals use to make distinctions between the West (the “Occident”) and the East (the “Orient”). Said argues that the idea of Orientalism was mainly created “as a Western style for dominating, restructuring, and having authority over the Orient” and has resulted in the continuing prejudice and stereotyping of Eastern culture (Said 3). Fashion, being a product of culture, has evidently been impacted by this perspective of Orientalism and by the overall impact of postcolonialism. The book *Fashion and Postcolonial Critique* by Elke Gaugele and Monica Tittton explicitly covers the impact of postcolonialism in fashion. This book analyzes fashion as a cultural, social, political, and historical phenomenon. Through examining the change in perception of clothing as a result of decolonization, this work further explains the overall impact of colonialism and globalization on fashion design. The ideas presented in this book will serve as a critical frame to understanding cultural appropriation in fashion. The history of global influences provided can be studied to understand the inspiration and reasons behind incorporating different cultural elements in Western fashion design.

This paper analyzes the significant impact of culture on identity, as well as the counterargument that most fashion is appropriated in relation to the overall problem of cultural appropriation in the fashion industry. The first section, Historical Context, uses the arguments of Ford and Said to look at the historical background in order to lay the founda-

tion for the argument about appropriation's effect on identity as well as analyzing when culturally inspired fashion is considered appropriation or appreciation, which will be treated in the final two sections of this paper. *Overall, this paper will argue that the cultural appropriation of traditional fashion styles is a major issue because it negatively impacts cultural identity, misrepresents cultures, and further reinforces erroneous colonial attitudes.

HISTORICAL CONTEXT

A historical context is necessary to understand how and why cultural appropriation has taken place. The origins of modern cultural appropriation traces back to the “ages of Enlightenment and Empire,” beginning in the 15th century when the world was transformed to fit into the requirements of Europe as a result of colonialism and imperialism (Shand 52). Colonialism is the practice of establishing control and power over another country or group of people. In this time period, various European countries began looking for other civilizations and new trade routes beyond their continent. This resulted in the initial colonial expansion with the motives of “God, Gold, and Glory”; colonizers sought to spread Christianity, gain control of new riches, and establish their dominance amongst their fellow nations by having control of more land (Osman). Culture through textiles, spices, and technology had already been shared by merchants and travelers across the Silk Road network as early as the fourth century. However, from a western point of view, the mixing of various cultures is first seen in the early seventeenth and eighteenth centuries. During the height of colonialism in the Americas, cultural, economic, and intellectual ideas were shared, exchanged, and stolen between the colonizers and indigenous people. Subsequently, all forms of cultural heritage at this time, both tangible and intangible, were also stolen and borrowed from indigenous groups around the world by colonizers (Shand 52). The conflict of cultural ownership began with tangible artifacts being repurposed or displayed in museums and exhibitions as a token of conquest. This amalgamation of culture and cultural tensions expanded into the nineteenth century as European nations then began to explore and form colonies throughout the continents of Africa and Asia. However, the motives of this second colonial expansion were much more cynical. European colonizers believed they were superior to all other cultural groups and forcefully instilled their power, signifi-

cantly changing the sociocultural dynamics of the world. Through the processes of European hegemony, Western ideas, traditions, and religious beliefs were heavily enforced in these new regions, and “people [became] compelled to submit or buy into ideas that may be counter to their own everyday life interests” in order to mitigate oppression and to assimilate with the colonizers (Kaiser 34). Consequently, in terms of fashion, Eurocentric beauty standards became idealized, and Western clothing was heavily promoted as fashionable and modern in contrast to traditional appearances and clothing.

In the United States, the world of fashion has historically been limited to and viewed through the Western point of view. Therefore, fashion has typically been viewed in a binary system either belonging to the West or the East; the Occident or the Orient; the Modern or the Traditional. This differentiation, defined in the concept of Orientalism, has a prominent influence on the history of fashion. As Said argues, European imperialists created this view of the Eastern world as being different and “Other” to the West to justify and rationalize their imperialistic ideas and controversial decisions. Western designers regularly appropriated and borrowed from “Oriental” fashions to create new and different products. As noted, “the constant desire to innovate with original and effective solutions led Western designers to incorporate other cultures’ distinctive looks, reinterpreted by the designer’s creativity and sensitivity to other cultures” (Pozzo 3). Additionally, a designer’s eagerness to create original products incorporating Oriental elements stems from not only a capitalist perspective, but from consumers’ penchant for the “exotic”. The concept of the Orient is often related to the ideas of being exotic, ethnic, and unique. Therefore, fashion consumers desire clothing and accessories that reflect the “Indigenous/Oriental” aesthetic, which also conveys deeper feelings of authenticity and uniqueness (Vézina 8). In consumers’ desire to obtain these “exotic” and “unique” items, many forget about the large role that fashion plays in cultivating cultural identity.

CULTURAL IDENTITY & APPROPRIATION

Fashion and clothing are agencies of self-expression that have always played a critical role in establishing and developing cultural identity. As a concept, fashion has transcended through time and has ties to “conditions of self-worth; the pursuit of individuality; the relation of appearance to deeper character traits; the dynamics of social relationships,

gender roles, sexuality, standards of taste, economic equality, and social class standing”, and so forth (Thompson et al. 15). Rather than being merely a fabric worn over the body, fashion plays a significant role in both history and in establishing identity. Fashion has historically been used not only as a form of self-expression, but also as a visual marker to distinguish people of a specific region, religion, class, or group. As Ford argues in “SNCC Women, Denim, and the Politics of Dress,” communities and society have used clothing and accessories to help establish a sense of belonging and create a collective ethos (657). The Japanese kimono, Chinese cheongsam, Indian sari, Mexican sombrero, Scottish kilt, Spanish flamenco dress, Maasai beadwork, Turkish fez, and Arabian keffiyeh are all examples of traditional cultural fashions that are used as symbols of these nations and their cultures in a global perspective. As a result, appropriation of cultural fashion has a significant impact on identity: separating an item, design, or accessory from its respective cultural context and using it in another context. However, “in so doing, specific meanings are erased, and cultural significances shift and slide” which changes the value of the fashion (Shand 54). Fashion and clothing hold a long history, and the most detrimental consequence of cultural appropriation is that it often results in the erasure and loss of the true cultural significance of that fashion.

To better understand the reality of the issue of cultural appropriation, it is necessary to examine and study specific examples. One prominent and recent example of cultural appropriation seen in popular fashion is the use and wear of the bindi, a traditional ornamental dot worn by Hindu women in between their eyebrows. While there are varied versions, the traditional bindi is “interpreted as the mystic third eye ... and represents specific spiritual devotions” in the Hindu faith (Antony 347). Alongside its religious significance, the bindi is also traditionally worn as a symbol of a women’s marital status. Through the years due to its popularity and use in the South Asian media, the bindi is now more commonly worn by a general population of South Asian women and girls. However, beginning the early 21st century, there have been many instances of western individuals appropriating the bindi. For example, Figure 1 shows actress Vanessa Hudgens (left) and singer Selena Gomez (right) both wearing the bindi on their foreheads. As shown, Vanessa Hudgens wore a silver bindi to the Coachella Music Festival in April of 2013, while Selena Gomez wore a red bindi while performing at the 2013 Billboard Music Awards. These pictures show two pronounced examples of cultural

appropriation as both celebrities wore the bindi as an additional accessory to their outfit, without giving any acknowledgement to the traditional culture it belongs to. The bindi, as previously mentioned, holds a special significance and cultural meaning, hence many members of the South Asian community have been deeply hurt by these acts of cultural appropriation. Historically, South Asian women in the West and specifically the United States have faced a great deal of discrimination and racism as a result of wearing the bindi. This is explicitly seen when a hate group called “The Dotbusters” formed in New Jersey with the primary purpose of targeting and attacking Indian women who wore a bindi (a dot on their forehead) (Anand 1). However, when Western celebrities and models wear the bindi, they are regarded as unique and praised for embracing an “exotic” look as seen through countless magazine articles and blog posts written about their outfit (Larrabee-Zayas). This double standard in the fashion industry, in which Western society receives praise for using cultural fashion as opposed to Eastern society which is criticized for wearing traditional clothing, results directly from the traditional, colonial mindset that viewed the West as superior to the East. As Gaugele and Tilton state in their book *Fashion and Postcolonial Critique*, in global fashion history the imperial power dynamics significantly impacted the view of traditional clothing and resulted in many countries adopting more Western



Figure 1: Vanessa Hudgens and Selena Gomez wearing a bindi.

fashions. The act of cultural appropriation, whether deliberate or done out of ignorance, reinforces the mindset of Eastern society as “lesser” and ignores the intentional erasure of culture. Therefore, when non-South Asian women wear the bindi, their act of cultural appropriation is insensitive and harmful not only because of the symbolic meaning, but also due to the history of Western cultures taking from Eastern cultures.

Another recent example of cultural appropriation was seen when luxury Italian fashion brand Gucci was accused of appropriating turbans. A *turban* is a traditional type of headwear, with different religious connotations, worn by many people in the Middle East and South Asia. Turbans are most commonly associated as a religious headpiece worn

by Sikh men as a symbol of their faith and as a sign of honor and respect toward fellow members of their faith. It is also used by men to cover their hair, which is never cut as an expression of their acceptance of God's will. In February 2018, during Milan Fashion Week, Gucci's fashion show displayed models wearing their new accessory the "Indy Turban." As seen in Figure 2, a non-Sikh male model was walking the runway wearing a bright blue turban alongside other Gucci apparel. Members of the Sikh community were deeply offended by Gucci's disregard and misrepresentation of their culture as they consider the turban to be a sacred symbol of their faith and not a mere fashion accessory. Gucci appropriated the turban, a symbolic and religious headwear, and tried to market it as a chic, western accessory. In addition, they tried to capitalize off of this appropriated accessory by excessively marketing it for around \$800. The Sikh community was deeply saddened by this form of cultural appropriation as they believe it neglected to acknowledge the severe discrimination and attacks many of their community have faced for wearing the turban historically (Kaur).



Figure 2: Model at the Gucci Show wearing a turban.

The impact of cultural appropriation on identity is clearly seen here: Sikh men are regularly attacked and targeted for wearing turbans, but in contrast Gucci capitalizes on their appropriated "Indy Turban" which they sell as a fashion accessory. The lack of recognition and the failure to acknowledge the symbolism and value of the turban to the Sikh faith results in erasure of the value of the turban and consequently diminishes their cultural identity. The lack of empathy displayed by Gucci when marketing the product exhibits Said's point of view on how orientalism is used to benefit the Western world. In this instance, Gucci takes inspiration from the "oriental" culture and markets the turban as a unique piece with ethnic ("Indy") connotations. However, they fail to acknowledge the origins of the turban and refute the turban's negative perceptions popularized by Western media. As Said argues, this perception of the "Orient" in this way is used by the West to control and manipulate

the perception of other cultures and to set apart individuals. Therefore, Gucci's appropriation of the turban is not only an issue as it is insensitive to the Sikh faith and the challenges Sikhs have endured in the Western society, but it is also an issue of diminishing cultural identity by inappropriately trying to westernize the culture.

APPROPRIATION VS. APPRECIATION

The topic of cultural appropriation is highly debated by both scholars and the media; as many argue that what is viewed as cultural appropriation is in actuality cultural "appreciation". Critics of cultural appropriation believe that culture cannot be appropriated because it cannot be owned by a singular entity. These critics use the idea of cultural appreciation as a counter argument to dismiss appropriation, arguing that when designers, consumers, and celebrities draw inspiration from cultures, religions, and traditions by wearing their clothing and accessories, they are genuinely appreciating and embracing the culture. However, they often fail to realize fashion's important context, significance, and ties to identity. Scholars such as Minh-ha T. Pham argue that the debate surrounding cultural appropriation is pointless as it often falls into the patterns of performative activism. As she explains, often following an event or apparel release, a brand/designer will be targeted for appropriating culture, the media then issues stories regarding these allegations, and in a matter of time, the issue is completely forgotten as another takes precedence. In reality, no change is made to address the issue. Many, including Pham, conclude that this argument is often meaningless as it falls into the binary system of thought which juxtaposes appropriation and appreciation with right and wrong. Many emphasize that this binary divide results in the same argument of the West being thieves and the cultures being appropriated as the passive victims, hence once again emphasizing the stereotypical hierarchical relationship (Carriger 169).

To understand the debate of whether wearing ethnic fashion is considered cultural appropriation or appreciation, it is necessary to analyze the power dynamics between the individual and the culture. As previously defined, cultural appropriation is considered as the act of the dominant culture taking a component of the minority culture. This distinction between the dominant and minority culture is an important factor in determining acts of appropriation. Fashion historically and currently is a form of expression that allows individuals to assume power

and prestige through their outfits and accessories. However, to others fashion is not about either prestige or privilege, but rather is an embracing of their way of life. This is true for minority cultures to a great degree as “identity is precious and those who feel marginalised may not wish to see theirs dissolve in the deluge of globalization” (Chesterton). Consequently, minority cultures often feel that Western appropriation of their ethnic fashion is a form of “modern colonialism.” This is seen through the previous examples of the bindi and the turban, as people of those respective minority cultures were discriminated against for wearing those fashions and showing their “otherness” by Western society. Meanwhile, the Western fashion industry capitalizes on this same culture and is praised for doing so. The consequence of cultural appropriation is that it often “reaffirm[s] the very thing they intend to oppose, white Western domination over and exploitation of culture at the expense of everyone else,” (Pham). In this perspective, cultural appropriation negatively reaffirms and allows the colonial idea of Western dominance over other cultures to continue.

When making the differentiation between whether a fashion can be classified as cultural appropriation or as cultural appreciation, it is important to understand the concept of intent. Appropriation of fashion is often not just a matter of the material object that is used; it is an issue because of the act or performance of appropriation. Fashion, through clothing and accessories, has meaning because of the intertwined relations of the item, body, and actions. The relation between these ideas is encapsulated in the overall performance and act of wearing these fashions. Michelle Liu Carriger emphasizes this idea in her article “No ‘thing to wear’: A brief history of kimono and inappropriation from Japonisme to kimono protests.” When considering appropriation of the kimono in this context Carriger states that “the perceived appearance (such as gender and race) of the body wearing the kimono (and how the kimono itself looks and seems) and what those clothed bodies *do* matter hugely to how the body and the kimono come to *mean*.” (Carriger 174). This explains that the meaning of the clothing is largely determined not only by the history of the fashion, but is also dependent on the wearer and their actions. Therefore, in order for the use of cultural fashion to be perceived as appreciation instead of appropriation, one must identify the context and intention of the performer. The context of where the individual wears this fashion is important as wearing ethnic clothes to cultural events or in the traditional country it is historically worn in is acceptable and often

encouraged. However, wearing cultural fashions as part of a costume or for aesthetic purposes is inappropriate and undoubtedly a form of cultural appropriation. For example, as previously mentioned the kimono is a traditional Japanese garment with much cultural significance and history. Wearing a kimono for a special festival or when in Japan can be considered as a form of cultural appreciation; however, wearing a kimono as a Halloween costume is definitely a form of cultural appropriation. This distinction in the intention and the context of the using cultural fashion is key to genuinely identifying whether the use of the fashion is a form of appropriation or appreciation.

CONCLUSION

As discussed and proven in my paper, cultural appropriation in fashion negatively impacts cultural identity and emphasizes colonial ideas. By analyzing resources that detailed the connection between fashion, identity, and the impact of cultural appropriation with specific examples, this research has argued that appropriation in fashion has severe consequences, and it is an issue that must be addressed. Ford's idea of fashion as a symbol in establishing a sense of community accords with understanding how cultural fashion serves as a tool for establishing individual and cultural identity. Similarly, the idea of postcolonial theory significantly adds to the understanding of the general and specific consequences colonialism had on global populations. Said's idea of Orientalism provided a solid framework for understanding the West's bias and how their ideas of superiority were transferred in their colonial interactions and through the fashion community when misrepresenting cultural elements. The counterargument that cultural appropriation is mistaken for cultural appreciation is refuted by analyzing the power dynamics of the fashion industry, recognizing the severe impact dominant cultures make when appropriating cultural fashions, and understanding the importance of the intent and context when wearing culturally inspired fashion. Cultural exchange in the fashion industry has led to the creation of some of the most unique and iconic looks. Nonetheless, the issue of cultural appropriation in the fashion industry must be addressed to respectfully and adequately continue to produce new and innovative multicultural fashion pieces in the future.

WORKS CITED

- Anand, Vivodh Z. J. "The Dotbuster Effect on Indo-American Immigrants." *Journal of Immigrant & Refugee Studies*, no. 1, Informa UK Limited, Apr. 2006, pp. 111–13. Crossref, doi:10.1300/j500v04n01_08.
- Antony, Mary Grace. "On the Spot: Seeking Acceptance and Expressing Resistance through TheBindi." *Journal of International and Intercultural Communication*, no. 4, Informa UK Limited, Nov. 2010, pp. 346–68. Crossref, doi:10.1080/17513057.2010.510606.
- Carriger, Michelle Liu. "No 'Thing to Wear': A Brief History of Kimono and Inappropriation from Japonisme to Kimono Protests." *Theatre Research International*, no. 2, Cambridge University Press (CUP), July 2018, pp. 165–84. Crossref, doi:10.1017/s0307883318000287.
- Chesterton, George, et al. "Cultural Appropriation: Everything Is Culture and It's All Appropriated." *British GQ*, 15 Jan. 2019, www.gq-magazine.co.uk/article/the-trouble-with-cultural-appropriation.
- Ford, Tanisha C. "SNCC Women, Denim, and the Politics of Dress." *The Journal of Southern History*, vol. 79, no. 3, Southern Historical Association, 2013, pp. 625–58, <http://www.jstor.org/stable/23795090>.
- Gaugele, Elke, and Monica Titton. Fashion and Postcolonial Critique. *The MIT Press*, 2019, p. 286.
- Kaiser, Susan B. *Fashion and Cultural Studies*. Bloomsbury Publishing, 2012.
- Kaur, Harmmeet. "Here's Why Sikhs Were Offended by This \$790 Gucci Turban." *CNN*, Cable News Network, 19 May 2019, www.cnn.com/style/article/gucci-turban-sikh-trnd/index.html.
- Larrabee-Zayas, Dory. "Selena Gomez V. Vanessa Hudgens: Battle Of The Bindi - Vote." *Hollywood Life*, *Hollywood Life*, 15 Apr. 2013, hollywoodlife.com/2013/04/15/vanessa-hudgens-selena-gomez-bindi-mtv-movie-awards-pic/.
- Osman, Jamila. "What Is Colonialism? A History of Violence, Control and Exploitation | Teen Vogue." *Teen Vogue*, 22 Nov. 2017, <http://www.teenvogue.com/story/colonialism-explained>.
- Pham, Minh-Ha T. "Why We Should Stop Talking About 'Cultural Appropriation.'" *The Atlantic*, 15 May 2014, <http://www.theatlantic.com/entertainment/archive/2014/05/cultural-appropriation-in-fashion-stop-talking-about-it/370826/>.
- Pozzo, Barbara. "Fashion between Inspiration and Appropriation." *Laws 9.1*, no. 1, Multidisciplinary Digital Publishing Institute, 12 Feb. 2020, pp. 3 doi:10.3390/laws9010005.
- Said, Edward W. *Orientalism*. New York: Knopf Doubleday Publishing Group, 2010.
- Shand, Peter J. "Scenes from the Colonial Catwalk: Cultural Appropriation, Intellectual Property Rights, and Fashion." *Cultural Analysis* 3, 2002, pp. 47–88.
- Thompson, Craig J., and Diana L. Haytko. "Speaking of Fashion: Consumers' Uses of Fashion Discourses and the Appropriation of Countervailing Cultural Meanings." *Journal of Consumer Research*, no. 1, Oxford University Press (OUP), June 1997, pp. 15–42. Crossref, doi:10.1086/209491.
- Vézina, Brigitte. "Curbing Cultural Appropriation in the Fashion Industry." *Centre for International Governance Innovation*, 3 Apr. 2019, <http://www.cigionline.org/publications/curbing-cultural-appropriation-fashion-industry>.

Alisha Zhu

A Perfect Imperfect Performance: Remodeling the Model Minority

ABSTRACT

Viewed as a fundamental aspect of a well-rounded education, classical music has emerged as a major presence in many Asian American households and has come to symbolize excellence achieved through hard work. Due to the perceived collective success, Asian Americans are often referred to as the “model minority.” The model minority stereotype describes Asian Americans as academically and economically accomplished, especially in comparison to other minority groups. Perhaps initially used as praise, they are now entrapped in the myth of the model minority stereotype. Besides being restrictive towards the Asian American community, this stereotype also contributes to the inequality in America by creating a racial wedge between Asian Americans and other minority groups, particularly with Black Americans. Through the frameworks provided in the racial triangulation theory and critical race theory, this paper will explore how participation in classical music, as well as the departure from classical music, is involved in the Asian American experience. In other words, how is Asian American identity linked to cultural assimilation and how do Asian Americans overcome the symbolic violence that is present in classical music? Through contrasting classical music with jazz music, this paper finds that shattering the foundations of the model minority stereotype allows Asian Americans to hold agency over their sense of individuality and to construct a more authentic identity that is separate from the one created by current dominating mainstream beliefs in America.

INTRODUCTION

“As we grapple as a nation, a community, and individually with the terrible events of this past week, I want to offer a song on this first day of Spring: may hope spring eternal, and may we persevere towards the light of truth, justice, and love,” Helen Sung, a Chinese-American pianist, wrote on her Facebook page on March 20, 2021. Four days before this post was made, six Asian women were senselessly killed in a shooting in Atlanta, Georgia. While the suspect states that his actions were not racially motivated, the rise in anti-Asian hate crimes throughout America

is indisputable. Since the beginning of the COVID-19 pandemic, there have been nearly 3,800 hateful incidents against Asian Americans (Intarasuwan). Although the “Stop Asian Hate” movement has been garnering greater attention, anti-Asian sentiment is nothing new. Initially classically trained, Sung is now an acclaimed jazz musician. Sung’s composition, titled “Hope Spring Eternally,” is a gift among the seemingly endless hate incidents that fill the news and media. The warm tune that she played was characterized by dynamic, syncopated rhythms that seemed to dance across the room. Her composition is much more than a piece of music; it symbolizes resilience, a harmonious intertwinement of minority cultures, and a challenge to the model minority stereotype that has been largely responsible for the anti-Asian hate incidents across the United States. However, Sung is not alone in those endeavors. In a vast concert hall, a hauntingly beautiful melody that captures the atmosphere and intensity of a dark winter night cuts through the air. Eyes closed and brows furrowed, Sarah Chang, a Korean-American violinist, plays with passion and poignancy, creating her own emotional interpretation of the Sibelius Violin Concerto in D Minor. Starting lessons at the prestigious Juilliard School at the age of six and debuting with the New York Philharmonic Orchestra at the age of eight, Chang earned the title of “child prodigy,” a term that has become tied to the model minority stereotype. Commonly perceived as a compliment, the model minority stereotype describes Asian Americans as hardworking, docile individuals who are socioeconomically successful and are well-assimilated into mainstream American culture. Inspired by Sung and Chang, I will examine how classical music training, as well as the deviation from classical music training, is involved in Asian American identity construction. That is, how can participation in classical and jazz music perpetuate or break the model minority stereotype that has obstructed the formation of an Asian American identity, and how has this resulted in the persisting hate crimes fueled by racism and xenophobia against the Asian American Pacific Islander (AAPI) community?

Through Claire Jean Kim’s racial triangulation theory in “The Racial Triangulation of Asian Americans” and through David Eng and Shin-hee Han’s applications of the critical race theory in *Racial Melancholia, Racial Dissociation: On the Social and Psychic Lives of Asian Americans*, I will explore how the model minority stereotype influences how Asian Americans construct narratives of self, ethnicity, and class status through classical music and jazz music. Asian American involvement in classical music is not necessarily an act of acculturation nor a loss of tradition, but

allows for the formation of a powerful, new Asian American identity that embraces the immigration experience. Additionally, Asian American engagement in jazz music, which is deeply rooted in Black culture, begins to close the racial minority gap that was widened by the establishment of the model minority stereotype. After all, jazz music centers on collaboration and requires mutual respect for both cultures. Moreover, jazz music—an essential component of the Black Power Movement that advocated for racial pride in the 1960s—can provide greater insight into how Asian Americans can combat racialization. The intricacies of Asian American engagement in classical and jazz music provide approaches on how Asian Americans can actively break the rigid barriers established by the model minority stereotype.

SILENCE: THE HIDDEN TRUTHS & IMPLICATIONS OF THE MODEL MINORITY STEREOTYPE

The model minority is a facade that conceals the different socioeconomic hardships that various Asian ethnic groups face, especially since it formalizes the entire AAPI community under one cultural heritage. The AAPI community, in reality, is an amalgamation of cultures: “together [it] speaks more than 100 languages, practices a wide variety of religions, and represents more than 50 ethnic groups,” (Bleiweis). The diversity within the AAPI community means that there is not one story nor one voice that constitutes the Asian American identity. Eng and Han argue that “The model minority stereotype is a myth because it homogenizes widely disparate Asian American and Asian immigrant groups by generalizing them all as academically and economically successful, with no social problems to speak of” (41). As a collective label, the model minority stereotype melds all Asians into a single group and renders invisible the large economic disparity that continues to exist in the Asian American community. It creates the widespread fallacy that Asian Americans do not experience struggle or racial discrimination. Because this fallacy is believed to be the truth, many Asian Americans are not provided the help that they may need, and many Americans end up forming biases that make it difficult to accurately discern racially motivated incidents. For instance, Russell Jeung, a professor at San Francisco State University, asserts that a distinction exists between the violence against elders, which have “not been found to be explicitly racially motivated,” and the “racism those in the community have been facing due to the problematic link be-

tween the virus and Asian Americans,” (Yam). Even if the attacks against the elders were not found to be explicitly racially motivated, it is possible that prevailing implicit biases incited those attacks. Since Americans, including those with authority, have remained largely incognizant of the discrepancies within the Asian American community, they are in denial of the racism and microaggressions that exist. Microaggressions, which are subtle and often automatic discriminations, stem from the model minority stereotype. One example of a microaggression is believing Asian Americans to be highly capable, thus holding them to a higher standard. This hinders those occupying lower social classes from raising themselves to a more favorable position in society because they are constantly expected to excel. Thus, change cannot occur unless it is recognized that “model minority” is not a compliment but a myth that continues to ostracize Asian Americans.

The model minority stereotype has contributed to the racial triangulation of Asian Americans, a racial hierarchy that stratifies and positions Asian Americans relative to both Blacks and Whites. Consequently, Asian Americans are regarded as both “superior” and “inferior” but always distinct from the other groups. Kim argues that Asian Americans are triangulated in two dimensions: through processes of racial valorization and civic ostracism. Racial valorization is related to a group’s family values, intelligence, success, and work ethic; civic ostracism defines whether a group is viewed as an “insider” or an “outsider.” These processes position Asians as superior to Blacks yet also assert that they are perpetual foreigners and unassimilable with Whites. Thus, Whites can maintain their control over both minority groups and reinforce their privileges. She notes that “The often explicit suggestion is that Blacks have failed in American society due to their own deficiencies: after all, if Asian Americans can make it, why can’t Blacks? [...] Yet the model minority myth does not claim that Asian Americans are culturally assimilated into White society: instead, it posits their material success and attributes this to their ongoing cultural distinctiveness” (Kim 118). Not only does the model minority stereotype enable Whites to hold supremacy over Asian Americans, but the “success” that persistently accompanies Asian Americans also grants Whites the ability to deny the underlying racism that exists against Asian Americans. “Success” then transforms into an unfavorable quality, as it becomes recognized as a unique characteristic of being an Asian American and not as a universal quality that all individuals may have. This idea ascertains the existing notion that Asian Americans are

intrinsically different from Whites, and thus unassimilable into American society. Eng and Han take Kim's claims one step further by arguing, "The deployment of the model minority myth configures the unequal status of African Americans in US culture and society as a self-inflicted injury" (41). The term "self-inflicted injury" contrasts Kim's mention of "deficiencies." While "deficiencies" can refer to factors that African Americans cannot control, "self-inflicted injury" suggests that African Americans are actively responsible for their unequal status. Comparing Asian American "success" with African American "failure" has fueled a racial divide between the two minority groups. This suggests that even with a shared minority status, Blacks hold similar views as Whites, and they too perceive Asians as "outsiders." This causes Asian Americans to be ranked lower on the civic ostracism scale of racial triangulation. The cultural differences invoke deeply ingrained views of racial differences among the two minority groups and reinforce the racial hierarchy that places Whites at the top, Asians in the middle, and Blacks on the bottom.

DISSONANCE: A DISCONNECT BETWEEN CULTURES

For Asian Americans, the struggle against White dominance and against the model minority stereotype is also present in music. This is peculiar, considering that music is ubiquitously regarded as the universal language that transcends beyond linguistic and geographic barriers. However, the fact that music cannot be detached from preexisting notions of race and ethnicity illustrates that discrimination, whether intentional or not, is present in some of the most unexpected places. The model minority label pressures Asian Americans into conforming to the stereotype of exceptionalism and success and dictates Asian American identity construction, especially in classical music. Asian American musicians suffer from the depiction that they are "automatons, robots without souls" (Yang 14). The perception that Asian Americans are machine-like and lifeless fosters the impression that Asian Americans are foreigners who do not belong. This description is dehumanizing and causes Asian Americans to be seen as inferior in the classical music world because it means that they are unable to reach the level of emotion that is characteristic of outstanding classical music performances. Hence, besides mastering the techniques of a musical piece, Asian Americans are faced with the extra challenge of obtaining acceptance in the classical music community. The

exclusion of Asian American classical musicians can be interpreted as symbolic violence, which “refers to power structures that result in the internalization of humiliations and legitimations of hierarchy that results in self-blame for misfortunes and a naturalization of the status quo” (Lee 113). Both the construction and legitimization of these stereotypes solidify hurtful standards that allow Whites to maintain their power. Because Asian Americans believe that they are responsible for their own stature in music, they seek ways to improve it, without realizing that the true issue lies within Americans’ internalization of the model minority stereotype. It seems that “returning to one’s roots’ is a familiar discursive trope on which Asian American musicians” attempt to overcome this symbolic violence and to achieve acceptance (Wang 888). To be recognized, Asian Americans are forced to conform to mainstream society standards, which is the belief that Asian Americans are more Asian than American. This, however, also has undesirable consequences: “Asian Americans have had to negotiate a precarious relationship with the American mainstream, balancing alternating pressures of assimilation and cultural retention and struggling to create a viable self against the backdrop of hegemonic Orientalist representations” (Yang 11). As a racial minority, Asian Americans are faced with the “pressures of assimilation,” as classical music offers the opportunity for them to engage in Western culture and fade the distinctive line between being Asian and being American. It provides the opportunity for them to take part in a historically Eurocentric art form, thus establishing an overlap between their present and America’s past. At the same time, Asian Americans are faced with the pressures of maintaining cultural heritage, since engaging in classical music often corresponds to a loss of tradition. However, when Asian Americans play traditional Asian music, they are forever linked with that specific representation of the East, which threatens the emergence of a unique Asian American identity and reinforces Asian Americans as a minority group that does not belong in the Western world of classical music. Thus, due to the dichotomy of the East and the West, to legitimize and maintain the presence of a new cultural history that stems from two initially separate cultures, Asian Americans must maintain a fine balance between the two.

The unfavorable portrayal of Asian American classical musicians diminishes the accomplishments that Asian Americans have achieved in music and devalues traditional Asian beliefs, preventing them from attaining the perceived higher class status that is often associated with classical music. Zhou and Bankston mention that “unanticipated con-

sequences of Asian success actually steer even the socioeconomically integrated Asian Americans into the disadvantaged rungs of the racial hierarchy” (247). Extending this to classical music, Zhou and Bankston’s argument indicates that the perpetuation of the model minority stereotype through classical music directly prevents Asian Americans from achieving their goal of a higher social status at large. It is important to note that there have been Asian musicians, such as Presidential Medal of Freedom and National Medal of Arts recipient Yo-Yo Ma, who have achieved immeasurable success within the classical music industry. However, due to the symbolic violence that exists against Asians, individuals like Yo-Yo Ma are rare, and many Asian Americans are unable to overcome the limitations set by the model minority stereotype. This means that engaging in classical music can have unforeseen results, since one of the reasons why Asian Americans, especially older generations, encourage participation in classical music is because of its link with prestige and elitism. Eng and Han provide a hypothesis as to why Asian Americans remain lower in the racial hierarchy: “To occupy the model minority position, Asian American subjects must therefore submit to a model of economic rather than political and cultural legitimation” (46). Economic and financial success do not always equate to political and social success. Asian Americans fail to achieve “political and cultural legitimation” because they have a historically and culturally different past from the dominating culture. Indeed, Yang mentions that “Under the watchful eyes of their immigrant parents, a disproportionate number of Asian Americans have achieved some measure of success in classical music.” However, the success is “seldom looked upon favorably by the American mainstream” since “the Confucian work ethic, for instance, is often construed as a substitute for real artistry” (13). Including “Confucian” as a modifier for “work ethic” suggests that hard work is distinctively tied to Asian culture and is not characteristic of the individual. While it is true that Asian culture tends to place greater value on hard-work and diligence and American culture tends to favor creativity and expressiveness, the implication that Asian Americans are not capable of true artistry invalidates their efforts. It also demonstrates that even if Asian Americans give an emotional and brilliant performance, the preexisting notions that Americans hold may greatly skew the way in which the performers are perceived. For instance, Lang Lang, a Chinese pianist and leading figure in classical music, is often criticized for his style of playing. Anthony Tommasini, a New York Times music critic, claims that “[Lang Lang’s] expressivity tips over into exaggeration, even vulgari-

ty,” (Tommasini). He believes that Lang Lang’s over-the-top showmanship is “vulgar” because it represents an ingenuine portrayal of sensitivity. The implications of Tommasini’s comments are reminiscent of Yang’s claim that Asian Americans are “automatons.” But what type of authenticity is Tommasini seeking? Is he viewing Lang Lang through a Chinese identity lens or through an American identity lens? Interestingly, he compares Lang Lang’s interpretation of Bach’s Goldberg variations to Italian pianist Beatrice Rana’s interpretation of the same piece, claiming that Rana plays with “wondrous lightness and sparkle,” a stark contrast with his commentary towards Lang Lang’s performance (Tommasini). This raises the possibility that there are unconscious biases influencing Tommasini’s judgments. He ends his critique by stating that “[Lang Lang] has to make this music touch [the listener], not himself,” which begs the question: how can Asian Americans express their true selves if their music is dictated by others? Without his distinctive style, Lang Lang risks being lumped into the “norm” and critiqued based on the model minority stereotype. His experiences indicate that breaking the model minority stereotype is unattainable at the moment because it is too deeply instilled into people’s mindsets. After all, it appears that deviations from the model minority stereotype are met with negative responses.

In addition to individual behaviors, the model minority stereotype extends from a difference in familial values and community structures. Like Yang, Wang examines the impacts of Asian beliefs with respect to the American mainstream. Specifically, she studies the collectivist culture that is greatly valued in Asia but not as valued in America. She notes that in the Asian American community, “while talent is located in the individual—it is what makes the child singular and exceptional—it is a collective resource for which the family must willingly make sacrifices... The gendered pressure to be a ‘good mother,’ coupled with the sense of moral obligation that encircles the idea of musical talent, led my interviewees to depict helping their children musically as a maternal duty,” (891). For example, Sarah Chang is a world-class violinist who cultivated her career through hard work and discipline, supporting the model minority stereotype. However, Chang’s most impressive facet was not her violin skills, but the rate at which she acquired those skills. She was a child prodigy. Can children become prodigies based solely on the talents they were born with? Not exactly: a large part of their success should be attributed to self-sacrificial Asian parents who prioritize their children above themselves. A fragment of the model minority stereotype

that is often overlooked is parenting style. To an extent, Asian parents define their success based on their children's success. Additionally, Asian mothers, known as "music moms," often give up their own ambitions for their child's classical music career because they feel that it is their "moral obligation" to develop their children musically. This indicates that helping their children is a responsibility and may not be completely of their own volition. This is unsurprising, since Asian cultures value collectivism—prioritizing the group over the self. American parents do not have the same approach because they tend to value the individual more. Thus, while Asian parents are an essential part of their children's success, their philosophy in raising children and their self-sacrificial attitude contrasts with the individualistic nature of American culture and contributes to the marginalization of Asian Americans through validating aspects of the model minority stereotype as facts.

CRESCENDO: AUTHORIZING ASIAN AMERICAN IDENTITY IN CLASSICAL MUSIC`

Even though classical music is recognized to be rooted in Western culture, the activity of learning classical music is becoming increasingly associated with Asian Americans. Through engagement with classical music, it is possible for Asian Americans to hold agency over their own identity construction and gain authority. Asian Americans already possess a multidimensional identity layered with Asian and American cultural influences. Currently, this agency is taken away from them because their identity is overshadowed by stereotypes. However, participation in classical music can ultimately lead to the creation of a culture that is not restricted by how Whites view Asians. Wang claims that "the belief that most Americans do not appreciate classical music allowed Asian parents to interpret their own interest in this elite yet marginalized cultural field as setting themselves apart from—and indeed above—mainstream American norms and values," (896). The fact that Asian parents "interpret their own interest" in classical music suggests that pursuing classical music training has become an implicit way of building an Asian identity in America. Instead of being perceived as an abandonment of traditional music and culture, classical music symbolizes going against American norms. The goal is not to assimilate, but to create a presence that accurately reflects the immigration experience and journey. Thus, it appears that aspects of the East, not the West, is empowered through classical mu-

sic. After all, there seems to be greater engagement from Asian children in classical music than other ethnicities: “in the string sections [of the San Francisco Youth Orchestra], Asian Americans outnumber non-Asians by more than two-to-one (39 to 15),” (Yang 15). Asian Americans dominating in a cultural art that is historically rooted in the West suggests that it is possible for minority groups to gain status similar to that of the majority group. However, Yang also mentions that the “numbers drop off dramatically at more advanced levels of musical careers. At UC Berkeley, 41 percent of the student population is Asian compared to 31 percent white (2004-2005 data), yet only 7.9 percent of the arts and humanities faculty and none of the music faculty is Asian,” (15). The decrease in the number of Asian Americans that pursue professional musical careers is indicative of a more complicated situation. Pursuing a career in the creative arts is still often discouraged by older generations of Asian Americans. One aspect of the model minority stereotype is the belief that Asian Americans are physicians, lawyers, or engineers. Unfortunately this stereotype holds certain truths. Many young Asian Americans feel pressured into pursuing these professions, as they tend to offer long-term financial and economic stability, an essential part of the Asian American Dream. The Asian American Dream mirrors that of the American Dream but places a greater emphasis on higher level education and choosing a “stable” career. Even jazz pianist Helen Sung felt this pressure, which she explains in an NPR interview, “My parents really wanted me to be a doctor. I was a big disappointment. Ha!” (Espeland). The fear of failure appears to encourage young Asian Americans into abiding by the expectations set by the model minority stereotype. However, by giving into this pressure, Asian Americans are exacerbating this stereotype and detracting from those in the Asian American community who are truly passionate about those professions. It seems that while older generations continue to chase the status associated with classical music, younger generations pursue classical music because they have a zeal for the art. Despite being closely associated with the model minority stereotype, classical music can actually help Asian Americans break the mold that they were placed in because pursuing the arts is generally considered unconventional among the Asian community. For instance, while Sarah Chang’s child prodigy title supports the model minority stereotype, her continued pursuit of classical music can do the opposite and allude to the formation of a more complicated Asian American identity within the dominating Eurocentric musical culture.

Furthermore, due to its association with prestige, classical music offers the opportunity for Asian Americans to confront cultural exclusion. As mentioned before, Yo-Yo Ma's career success is uncommon among Asian Americans in classical music. While uncommon, it also serves as evidence that it is possible for Asian Americans to overcome symbolic violence and gain respect through classical music, thus complicating the earlier claim that classical music does not offer the status that it is generally associated with. This is the case because "at the center of art are creativity, generativity, and celebration of the human spirit that represent civilization's highest accomplishments," (Lee 155). As an art form, classical music presents the opportunity to achieve beyond financial and economic success; music signifies ingenuity and expressiveness that may not be possible through other mediums. Indeed, Wang argues that "For middle- and upper-middle-class Asian immigrant parents at Juilliard Pre-College, participating in classical music represents a vehicle to demonstrate their educated status, their cultural sophistication, and their erudite tastes—precisely those traits that racialized immigrants, for whom English is a second, if not third, language, are viewed as not possessing," (133). With racism and language discrimination representing the unfortunate reality for Asian Americans, Asian American parents often involve their children in classical music as a source of investment and as a mode of upward mobility. Classical music can offer Asian Americans status that was originally marred by language barriers. In other words, the honors associated with classical music may have the ability to offset the perceived negative characteristics and inferiority that come with being immigrants. This is true because Lee extends this notion by arguing that art offers "avenues of expressing love and life-giving energy as well as for cultivating their development" and "when one feels loved, one can conceptualize oneself as having meaning and a place in the world," (155). Asian Americans can build a more inclusive community through their participation in classical music, forming bonds of support that may not have existed otherwise. Moreover, by enabling Asian Americans to actively define their own "place in the world," classical music makes it possible for Asian Americans to overcome the symbolic violence that arises from conceding to the social positions imposed upon them by the dominating group. However, this process is complicated by the fact that Asian Americans are far more accepting of classical music than other art forms. For instance, although Helen Sung's parents were not ecstatic that she wanted to pursue classical music, they were accepting of it. However, when Sung informed her par-

ents that she wished to study jazz music instead, they were quite unhappy with her decision. This is surprising, considering that both classical music and jazz music are regarded as “highbrow” music. Perhaps the pressure to become a part of the dominant culture, as well as the origins of each musical genre, continue to influence the way in which Asian Americans approach these two types of music. While classical music was considered the most prestigious of the European bourgeois arts, jazz music emerged as a working-class musical phenomenon with subversive purposes, as it was a key aspect of the Black Arts movement. However, the rebellious nature of jazz music may be even more compelling, for it can provide a medium for advocating for social change and political recognition.

HARMONY: EMERGENCE OF VOICE IN JAZZ MUSIC

Like classical music, participation in jazz music can aid in the formation of a powerful Asian American identity. However, instead of engaging in the dominant culture, as represented by Western classical music, Asian Americans are now connecting with and forming genuine experiences from a culture derived from another minority group. The mutual understanding achieved through jazz music can begin to ease the strained relationship caused by the idea that “Asian American cultural values are seen as more conducive to success than (read: superior to) Black cultural values,” (Kim 117). After all, the partnerships formed between Asian Americans and African Americans in free jazz place them as equals; they all contribute to an art form that is meaningful to their communities. In addition, Asian American involvement in free jazz, which has “served as a collective voice of urban African American communities” and has “played an important role in the development of a Black aesthetic,” can reduce the racial distance between Asians and Blacks (Asai 87). Since African Americans were able to fight for greater racial equality and cultural recognition through jazz music, Asian Americans hoped to use their success as an example and gain empowerment through jazz music in a similar way. The collective goals that Asian Americans share with African Americans can foster empathy, which can decrease the tensions between them. Wong, however, complicates Asian American involvement in jazz music by asking the question: “Do Asian Americans borrow, appropriate, incorporate, absorb, transform, evoke, or steal African American forms?” (163). In other words, would Asian American involvement in jazz music merely be a form of mimicry, and

would it be morally correct to do so? It depends on how Asian Americans approach jazz - if they take the time to understand and honor the history of jazz and its cultural importance to African Americans, then Asian American engagement in jazz music is a partnership, not appropriation. In fact, Wong argues that “musical collaboration enacts political coalition as well as respect for the African American origins of jazz,” (174). For many Asian Americans, working with African American musicians is an essential part of the learning and music creating process. Collaboration enables Asian Americans to understand jazz music on a deeper and more personal level, thus forming bonds with the African American community. Moreover, because jazz music offers endless opportunities for creative freedom, Asian Americans can compose music that is unique to their own backgrounds while still respecting African American influences. The music then becomes multicultural, serving as a symbol of mutual support and connection among the two communities.

Partaking in jazz is still atypical among Asian Americans because it is not seen as a reliable steady career choice, hence the reaction from Sung’s parents when she informed them about her pursuit of jazz. However, Asian American participation in jazz music, although rare, demonstrates that rejecting the model minority stereotype allows Asian Americans to hold agency over their sense of individuality and to truly exercise the freedoms of self-expression. Asai suggests that “it was not only the cultural nationalist sentiment attached to Free Jazz but its pioneering improvisational dimension that appealed to Asian American musicians,” (95). Jazz offered Asian Americans music openness, for improvisation required a deeper exploration of the self, an uncommon concept in the Asian collectivist culture. The introspective aspects of jazz music could encourage Asian Americans to reflect on how the model minority stereotype restricts their music and search for ways to minimize those limitations. In *Speak It Louder: Asian Americans Making Music*, Francis Wong states that in jazz music, he “hears particular histories and politicized, aestheticized stances; he hears what a musician ‘stands for,’ that is, whose influences sound through a particular performance” and suggests that “jazz musicians are well aware of who they’re coming from, and that these aural autobiographies are constituted selectively, with emotional and political awareness,” (Wong 176). Jazz music is created from an individual’s distinctive collection of past experiences and interpretations and can vary drastically from person to person. Thus, without the need for words, jazz music can serve as “autobiographies” and allow Asian Americans to have

a voice. In addition, sometimes Asian American musical experimentation expands beyond something that is instantly identifiable as jazz music. It becomes a collaborative piece that is layered with African American influences. In this way, jazz music represents the formation of a new Asian American identity that includes traditional Asian culture, the immigration experience, and the connections formed with another minority culture.

CONCLUSION

For Asian Americans, both classical music and jazz music offer ways of escaping marginalization and combating racial shunning, or the lack of civic acceptance defined in the racial triangulation theory. Because of the pervasive influences of the model minority stereotype, the American identity is seen as superior, which leads to the labelling of Asian Americans as outsiders. Asian American participation in both classical music and jazz music can help construct a new Asian American identity that may become dominant in its own right, even if it does not align with the American mainstream. Asian Americans can create their own mainstream identity that better encompasses their cultural origins and historical backgrounds. The Asian American experience in the musical world is a testament of strength. Through classical music, Asian Americans have confronted exclusion while maintaining a harmonious balance between traditional Asian culture and the Eurocentric-derived American culture. Through jazz music, Asian Americans have actively voiced their stories while forming connections with the African American community. In these ways, music can serve as a universal language because it fosters a sense of community and empathy. Music can become a powerful voice, even if only symbolically. However, although my investigations suggest that Asian Americans can overcome cultural exclusion through music, additional work and research must be done to further examine the triangulation of Asian Americans and the underlying anti-Asian racism. Given additional time, I would have attempted to further explore the extent to which the model minority stereotype influences Sarah Chang, Helen Sung, and Yo-Yo Ma as individuals. I would have also liked to examine Yo-Yo Ma's Silkroad project and analyze its impacts and successes as a multicultural project.

The hard work and dedication that Asian Americans are "known for" is not evidence of the model minority stereotype but of overcoming

adversity. Even with the heartbreaking headlines of “8 Dead in Atlanta Spa Shootings, With Fears of Anti-Asian Bias,” “61-Year-Old Filipino American Man Slashed in the Face in NYC,” and “Hate Crimes Targeting Asian Americans Spiked by 150% in Major US Cities,” the Asian American community has remained resilient. Resilience is not a substitute for anxiety and fear, but an emblem for overcoming that fear. Just as the fragmented notes and phrases in music are connected to form a memorable melody, the numerous cultural influences and voices that make up the AAPI community form a multidimensional yet cohesive Asian American identity.

WORKS CITED

- Asai, Susan M. “Cultural Politics: The African American Connection in Asian American Jazz-Based Music.” *Asian Music*, vol. 36, no. 1, University of Texas Press, 2005, pp. 87–108. JSTOR, www.jstor.org/stable/4098505.
- Bleiweis, Robin. “The Economic Status of Asian American and Pacific Islander Women.” *Center for American Progress*, 4 Mar. 2021, www.americanprogress.org/issues/women/reports/2021/03/04/496703/economic-status-asian-american-pacific-islander-women/.
- Eng, David L., and Shinhee Han. *Racial Melancholia, Racial Dissociation: On the Social and Psychic Lives of Asian Americans*, Duke University Press, 2019. ProQuest Ebook Central, <https://ebookcentral-proquest-com.proxy.libraries.rutgers.edu/lib/rutgers-ebooks/detail.action?docID=5630914>.
- Espeland, Pamela. “Round Midnight: A Late-Night Conversation with Helen Sung.” *NPR*, 17 Sept. 2011, www.npr.org/sections/ablogsupreme/2011/09/17/140566588/round-midnight-a-late-night-conversation-with-helen-sung.
- Huizenga, Tom. “The Diverse World of Yo-Yo Ma.” *NPR*, 7 Oct. 2015, www.npr.org/sections/deceptivecadence/2015/10/07/446364616/the-diverse-world-of-yo-yo-ma.
- Intarasuwan, Kiki. “Asian American Couple Told ‘Go Back to China,’ NYPD Hate Crime Task Force Investigates.” *NBC New York*, 17 Mar. 2021, www.nbcnewyork.com/news/local/asian-american-couple-told-to-go-back-to-china-nypd-hate-crime-task-force-investigates/2948155/.
- Kim, Claire Jean. “The Racial Triangulation of Asian Americans.” *Politics & Society*, vol. 27, no. 1, Mar. 1999, pp. 105–138, doi:10.1177/0032329299027001005.
- Lee, Bandy X. “Causes and Cures VII: Structural Violence.” *Aggression and Violent Behavior*, vol. 28, Elsevier Ltd, 2016, pp. 109–114, <https://www.sciencedirect-com.proxy.libraries.rutgers.edu/science/article/pii/S1359178916300441>.
- Lee, Bandy X. “Causes and Cures IV: The Symbolism of Violence.” *Aggression and Violent Behavior*, vol. 27, Elsevier Ltd, 2016, pp. 152–57, <https://www.sciencedirect-com.proxy.libraries.rutgers.edu/science/article/pii/S135917891630012X>.
- Lim, Woojin. “An Interview with Violinist Sarah Chang: A Pure Yet Political Art.” *Medium*, The International Wave, 30 Nov. 2020, medium.com/the-international-wave/an-interview-with-violinist-sarah-chang-a-pure-yet-political-art-75cde9f5524a.

- Tommasini, Anthony. "Lang Lang: The Pianist Who Plays Too Muchly." *The New York Times*, 4 Oct. 2020, www.nytimes.com/2020/10/04/arts/music/lang-lang-bach-goldberg-variations.html.
- Wang, Grace. "Interlopers in the Realm of High Culture: 'Music Moms' and the Performance of Asian and Asian American Identities." *American Quarterly*, vol. 61, no. 4, The Johns Hopkins University Press, 2009, pp. 881–903. JSTOR, www.jstor.org/stable/27735029.
- Wang, Grace. "On Tiger Mothers and Music Moms." *Amerasia Journal*, vol. 37, no. 2, Asian American Studies Center, 2011, pp. 130–36, doi:10.17953/amer.37.2.v5127j0371807341.
- Wong, Deborah. *Speak It Louder: Asian Americans Making Music*, Routledge, 2004. *ProQuest Ebook Central*, <https://ebookcentral-proquest-com.proxy.libraries.rutgers.edu/lib/rutgers-ebooks/detail.action?docID=183020>.
- Yam, Kimmy. "There were 3,800 anti-asian racist incidents, mostly against women, in past year." *NBCUniversal News Group*, 16 Mar. 2021, www.nbcnews.com/news/asian-america/there-were-3-800-anti-asian-racist-incidents-mostly-against-n1261257.
- Yang, Mina. "East Meets West in the Concert Hall: Asians and Classical Music in the Century of Imperialism, Post-Colonialism, and Multiculturalism." *Asian Music*, vol. 38, no. 1, Society for Asian Music, 2007, pp. 1–30. JSTOR, www.jstor.org/stable/4497039.
- Zhou, Min and Carl L. Bankston III. "The Model Minority Stereotype and the National Identity Question: The Challenges Facing Asian Immigrants and their Children." *Ethnic and Racial Studies*, vol. 43, no. 1, Routledge, 2020, pp. 233–53, doi: 10.1080/01419870.2019.1667511.

Sunny Huang

Arctic Indigenous Perspectives Within Climate Adaptation Strategies: The Relevance of Traditional Knowledge within Western Science

ABSTRACT

Climate change is an ongoing crisis both for the environment and the humans that inhabit it. Since the beginning of the Industrial Revolution, scientists have observed that the global temperature has risen about two degrees Fahrenheit (or 1 degree Celsius) which causes sea ice to melt, sea levels to rise, and precipitation patterns to become increasingly unpredictable. This is due to unsustainable production and consumption, specifically in developed countries like the United States. Governments and political organisations around the world manifest mitigative efforts and policies against these detrimental effects. While international scientific and technological endeavors continue to be undertaken, they prioritize western, scientific viewpoints of climate change. Oftentimes they overlook small, marginalized communities that experience more severe climatic changes in the recent decades—particularly those who reside in the Arctic regions. In this research paper, I delve into the perspective of Arctic Indigenous peoples and how they are able, or unable, to adapt to environmental and sociological effects of climate change. Their adaptive strategies and traditional knowledge are imperative for the maintenance of global climate health, and it is crucial to recognize the indigenous community who sought to deliver their narratives of the climate crisis that may validate global assessments. Indigenous peoples can ultimately contribute to global efforts through their knowledge and centuries of experience in the Arctic climate, and strive to integrate Indigenous Knowledge and Western Science.

INTRODUCTION

Arctic Indigenous communities have a long-term knowledge of adapting to the harsh climate in the Arctic and Subarctic regions. Due to global climate change being most impactful in the Arctic regions, Arctic

Indigenous communities are among the first to experience unpredictable climatic changes. These changes may impede their long-term adaptability and challenge the Indigenous knowledge that they have maintained through multiple generations (Jaakkola et al. 401). The term *climate* generally refers to the long-term pattern of weather over a particular region and time period, whereas *climate change* is a long-term shift in the Earth's climate. Scientists have observed that the global temperature has increased about two degrees Fahrenheit during the 20th century, but in the Arctic, temperatures rise at twice the rate of the global average. Although this seems to be an insignificant change, it has already caused severe environmental impacts on the polar regions, such as the melting of sea ice, sea level rise, and changes in wind and precipitation patterns. Indirect effects of climate change include increasing the frequency and intensity of forest disturbances. Insect outbreaks in boreal forests may impede many Arctic indigenous communities, as the forests provide subsistence and spiritual well-being. While climate change can enhance vulnerability and undermine resilience of indigenous peoples through detrimental changes in the Arctic ecosystems, Western scientists often frame these communities as victims rather than as equal representatives, causing international bodies, such as the United Nations, to primarily utilize scientific research and studies to develop global climate policies. Since the 1970's, global institutions acknowledge and take mitigating actions on the environmental impacts of climate change. However, they fail to consider Indigenous perspectives on the issues of climate change, along with "social, cultural, political, economic, and demographic changes in recent decades" that alter Indigenous culture and identity (Berkes, Fikret, and Armitage 109). More specifically, environmental changes can lead to the loss of traditional hunting grounds and decline in animal species as sources of food for indigenous peoples. Climate change will ultimately challenge Indigenous peoples' connection with their ancestral lands and alter indigenous life and traditional economies because melting ice impedes access to food and lowers the effectiveness of traditional harvesting, hunting, and herding practices. Water, food and vector-borne diseases will continue to arise among Arctic indigenous communities, as well as dietary transitions away from traditional foods (Milazzo). Politically charged issues may still be deferred as external experts claim stakeholder and stewardship status regarding resources, governance, and the environment of the Arctic and exclude traditional Indigenous knowledge in political areas (Stepien). These factors can weaken Indigenous adaptability and further marginalize

Arctic Indigenous communities, where ecological and socioeconomic impacts of climate change and globalization are simultaneously challenging indigenous livelihoods. Yet, they retain long-term knowledge and traditions of adaptability that provide them coping strategies and amplify indigenous resilience to climate change. Examining how traditional knowledge applies to Indigenous vulnerability, resilience, and adaptive capacity begs the question: Why does Traditional Ecological Knowledge in Arctic Indigenous communities make an important contribution to modern climate change resilience and adaptation efforts?

This research paper aims to explore the vulnerability and adaptability of Canadian Inuit and Northern Sami communities in the Arctic and Subarctic regions, and how their Indigenous knowledge can expand global understanding and coping responses to climate change. I will first explore how Canadian Inuit and Northern Sami thrive in the Arctic regions by delving into their traditional adaptive strategies and relationships with the Arctic environment. This includes how environmental knowledge (i.e., understanding weather conditions and landscapes) applies to hunting and reindeer herding practices, respectively. More specifically, I will investigate long-term and short-term adaptive strategies that emerge in recent years in response to climate change, and how climate change exacerbates vulnerability. To support this, I will delve into two Arctic Indigenous nations, the Inuit (Berkes, Fikret, and Armitage; Pearce et al.) and Sami (Brännlund and Axelsson; Jaakkola et al.), and the existing difficulties in short-term climatic changes in their everyday livelihoods. I will then use the theoretical framework of Traditional Ecological Knowledge (TEK) to analyze the use of Arctic Indigenous knowledge in Inuit and Sami resilience to recent environmental changes. TEK is a “cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment,” and often is an integral part of the local culture and tradition (Berkes 5). This knowledge, accumulated through experience, learning, and intergenerational transmission, can enhance the resilience of social and ecological impacts of climate change by demonstrating the ability to deal with complexity and uncertainty (Bohensky and Maru 10). Finally, I will address two scholarly debates on the cultural integration of Indigenous & scientific knowledge. One discusses whether conflicts will arise from these two distinct knowledge systems (Harris; Bohensky and Maru), and the other questions whether climate change

will augment the vulnerable status of Arctic Indigenous communities and diminish their adaptive capacities (Berkes, Fikret, and Armitage; Raygorodetsky). While the non-Indigenous public in the West believes that climate change primarily increases vulnerability among Arctic Indigenous communities, the impacts of climate change are ultimately dependent on the use of traditional and modern adaptive strategies, and the cultural integration of traditional and indigenous science. Indigenous knowledge and its formulated adaptive strategies can reduce the need for complex technological solutions in Western science. Technological developments cannot fully amend the widespread environmental calamities that they are held accountable to, such as the increased greenhouse gas emissions and reduced biodiversity from unsustainable resource management. By collaborating with Indigenous communities and learning to work with nature instead of against it, Western science can challenge the vulnerable status of Indigenous communities and bolster the voices of Indigenous people in the global environmental agenda. Therefore, when considering long-term adaptability and accumulated Traditional Ecological Knowledge, Arctic Indigenous communities exemplify important representatives to global climate initiatives through expanding the global understanding of climate change and delving into the complexity of climate change by looking beyond the environmental and physical phenomena.

ASSESSING VULNERABILITY AND ADAPTIVE CAPACITY FOR CLIMATE ADAPTATION

Traditional Ecological Knowledge can bring forward sustainable environmental practices, develop culturally-relevant adaptation policies, and enhance the validity of conventional scientific studies for climate change adaptation and mitigation. This includes the concepts of vulnerability and adaptive capacity to meet the challenges climate change outlines above. The concept of vulnerability has become central in addressing climate change and adaptation to its effects, which is the degree to which the capacity or the well-being of an individual or a group is determined based on changing social, economic, and environmental conditions in a particular region (Berkes, Fikret, and Armitage, 112). Here, the level of exposures to environmental and socioeconomic changes can determine one's adaptive knowledge and sensitivity to climate change, whereas Indigenous communities are most sensitive due to their resource-based livelihoods and long history of environmental management (qtd. in Pearce et al.

236). This applies to the current debate on the vulnerable status of Arctic Indigenous communities, since the Intergovernmental Panel on Climate Change (IPCC), an organization of the United Nations that provides scientific information on climate change to implement climate policies, makes little to no mention of Indigenous peoples as equal representatives of climate change (Berkes, Fikret, and Armitage 111). In 2014, the IPCC released its Fifth Assessment Report (AR5), which recognizes Indigenous, local and traditional systems, and practices as a major resource for adapting to climate change. However, these systems “have not been used consistently in existing adaptation efforts” (IPCC 19). Researchers who interviewed and studied Indigenous communities, as well as these communities themselves, disprove this perception by examining their adaptive capacity, or their “potential to adapt to climate change (including climate variability and extremes), to moderate potential damages, to take advantage of opportunities, or to cope with the consequences” (Pearce et al. 236). The idea that the Arctic climate already exhibits frequent weather changes enables Indigenous peoples to formulate and accumulate long-term adaptive capacity in their traditional practices. The risks of climate change, however, have brought to attention how these environmental changes occur more frequently and become less predictable over time, which becomes detrimental to indigenous adaptability and ultimately increases their vulnerability. Understanding the vulnerability and adaptive capacity of indigenous communities can become a framework for mainstream climate change research and adaptation policies; it can determine the severity of climate change and the levels of political actions needed to address this issue.

LONG-TERM ADAPTABILITY AND FLEXIBILITY IN ARCTIC INDIGENOUS PRACTICES: INUIT AND SAMI

Inuit and Sami communities are better adapted to the accelerated changes of the climate crisis as compared to non-Indigenous, western societies because of their existing traditional adaptive strategies and their connections to their ancestral terrains. By examining these two culturally distinct Arctic Indigenous communities, researchers and scholars can learn from their adaptive strategies and flexibility in their livelihood practices, which will apply in global environmental agencies. These indigenous communities have endured in such harsh conditions for many centuries, allowing for their adaptations to the changing Arctic to provide

western scientists and policymakers guidance towards more successful, impactful global climate change adaptation and mitigation efforts.

INUIT FLEXIBILITY IN HUNTING PRACTICES

The Inuit are Indigenous Peoples living in the Arctic regions of Canada, Greenland, and Alaska. According to the 2016 Census, approximately 65,000 of them live in 53 communities across the northern regions of Canada (“Inuit”). For centuries, the Inuit people survived primarily on fishing and hunting, while the traditional economy of many Inuit groups was based on the hunting of sea mammals, including seals, whales, caribou, and walrus (“The Inuit”). Berkes, Fikret, and Armitage’s study indicates that Inuit hunters are well adapted to the Arctic terrains, where there is low biological productivity, uneven distribution of resources, and unpredictable source availability. These conditions influenced Inuit hunters to develop flexibility in their hunting practices; Inuit hunters change the sequence of hunting locations, hunting techniques, or species that are more abundant that depend on the hunter’s knowledge of various species and sea ice (115). Flexibility, then, can be thought of as a combination of local environmental knowledge and adaptability, where knowledge allows hunters to be dynamic and flexible and continue hunting under changing conditions. Pearce’s study augments this conclusion in which “adaptation involves being sensitive to critical signs in the environment and knowing how to respond” (238). In this way, developing sensitivity, or keen observations, to environmental conditions allows Inuit hunters to determine appropriate adjustments to their responses to unpredictable environmental conditions. Though, this comes with a risk that can increase Indigenous vulnerability if the responses have not been effective to cope with direct detrimental impacts of sociocultural changes greatly linked to the environmental issue at hand. The Inuit are challenged by limited access to health services, low socio-economic status, high unemployment, crowded and poor-quality housing, lack of basic services such as drinking water, quality, and sanitation, and low educational achievement in the second half of the 20th century (Ford et al. 178). Sensitivity, then, depends on the effectiveness of long-term flexibility and adaptability in hunting practices to withstand variability and unpredictability of climate change.

Sami Adaptivity in Reindeer Management

Similar to the Inuit, Sami communities exemplify resilient communities against the alterations in vegetation and pasturelands through indigenous

knowledge of enhancing adaptability. The Sami are the descendants of nomadic peoples who had inhabited the Northern Scandinavian Arctic (Norway, Sweden, Finland, and Russia) for millennia. The population of Sami people is established to be between 50,000 and 70,000 in Norway, over 10,000 in Finland, 20,000 to 35,000 in Sweden, and 2,000 in Russia. Traditional Sami livelihoods include reindeer herding, fishing, hunting, handicrafts, and gathering in which they constitute important parts of Sami well-being. Most importantly, reindeer herding is believed to be the most viable livelihood because it was a means to maintain tradition, language, cultural identity, and empirical knowledge in the changing world (Jaakkola et al. 402). According to the article “Reindeer Management during the Colonization of Sami Lands: A Long-Term Perspective of Vulnerability and Adaptation Strategies,” sociologists Brännlund and Axelsson note that “knowledge held by Sami reindeer herders was critical for their adaptation, since in order to respond to changes they required knowledge of the changes, how they were likely to be affected and appropriate ways to adjust their practices” (1099). In other words, adaptation in reindeer management depends heavily on the knowledge Sami herders possess, where knowledge requires having keen observations on the land and knowing the best approach to a problem arising from the reindeer herding process.

The concept of flexibility becomes involved in the livelihoods of reindeer herding. For instance, Brännlund and Axelsson have identified four key aspects of “flexible herding”: “when pasture land was utilized (time), area used for grazing (space), herding techniques (practice) and working group size (organization)” in which they mainly depend upon “environmental and anthropogenic factors” (1099). Environmental factors include the availability of pasturelands and changes in environmental conditions, while anthropogenic factors include settlements and governance. These aspects of flexible herding, to fluctuate with environmental and anthropogenic changes, empower Sami herders to express their adaptability and to better cope with the environmental alterations of pastureland that are primarily caused by climate change. Flexibility constitutes the concept of adaptability because being flexible requires developing adaptive strategies for unforeseen predicaments. Raygorodetsky, however, addresses bigger concerns from Sami herders: as the climate warms, insect outbreaks will become more frequent and spread widely, which can wipe out boreal forests and destroy important spring food sources for reindeer. In addition, the annual migration route of an

individual reindeer herd becomes increasingly restricted, limiting herders' ability to move their reindeer away from affected areas of forest to find alternative sources of nutrient-rich spring food. Traditional adaptive strategies can be insufficient to cope with complex issues that involve environmental degradation, such as the destruction of ecosystems, extinction of wildlife, and pollution. This kind of mentality can strengthen the Western assumptions of Indigenous peoples as victims rather than as advocates for combating climate change. However, evaluating the vulnerability of Sami communities reveals the real concerns of climate change for Indigenous peoples, and identifies the importance of natural resource management, sustainable developments, and environmental knowledge in modern science. Regardless of the differences between Inuit and Sami cultures, traditions, and livelihoods, both concepts of traditional knowledge and flexibility play a pivotal role in the manifestation of Indigenous adaptive strategies.

Since climate change adds complexity to the recent changes in Northern regions, such as the unpredictability of ice and weather conditions, it is imperative to integrate technological developments and innovation with traditional adaptive strategies to further sustain and enhance Inuit and Sami livelihoods. Every decade over the period from 1979 to 2012, 3.5 to 4.1% of the Arctic sea-ice extent was lost (IPCC 4), having a profoundly negative impact on many indigenous hunters, who for millennia have relied on the pursuit of whales, seals, fish, and land mammals such as caribou to feed their families. The current food shortages also come along with skyrocketing food prices: milk often costs \$15 a gallon and steak more than \$25 a pound, as well as the cost of shipping food to supermarkets in Inuit towns (Struzik). As temperature continues to rise in the Northern regions, certain routes become too dangerous to navigate in thin, icy terrains, in which traditional knowledge and long-term adaptive strategies cannot fully sustain Arctic Indigenous adaptivity against short-term environmental alterations. Pearce et al. support the integration of traditional and new technologies when they note "Hunters who are knowledgeable of a combination of traditional and new technologies for weather forecasting and navigation are better equipped to deal with changing conditions than hunters who rely solely on new technologies" (239). By "combining traditional and new technologies," technology cannot not fully replace Indigenous knowledge, but rather it is an extension of Indigenous adaptability and flexibility in their hunting practices (239). Ford et al. introduce a similar concept when they state "TEK will remain

important for identifying and managing climatic risks and adapting to change [and] other skills are even more important in light of new and exacerbated risks” (185). TEK displays the importance of integrating two distinct knowledge that can benefit both modern and Indigenous societies. Such knowledge of traditional and technological adaptive methods is vital to decreasing indigenous vulnerability and enhancing their adaptive capacity against changing Arctic conditions. As such, Inuit long-term hunting strategies and Sami reindeer management allow Western scientists to investigate concepts of vulnerability and adaptive capacity, and their flexible use of the environment that can be incorporated in global climate initiatives.

APPLYING TEK IN WESTERN SCIENCE

Regardless of the distinctive viewpoints between Indigenous and scientific knowledge, both knowledge systems can complement each other by collaborating, embracing diversity, and finding a commonality between scientific and Indigenous environmental agendas. Having discussed the vulnerability and adaptability of Inuit and Sami nations, it is imperative that TEK becomes more prevalent in environmental management and resource sustainability; it can verify scientific implications of climate change that cannot be proven by quantitative scientific measurements alone. Indigenous adaptations derive from traditional ecological knowledge, and this knowledge can include Indigenous narratives or qualitative observations that can provide “intergenerational observations of various kinds of natural resource phenomena” (Alexander et al. 477). Riedlinger follows this statement by stating, “The ecological and environmental expertise found in Inuit communities can highlight parameters rarely measured by scientists and help make sense of scientific finds by placing them in a local context” (91). Given that the variability of effects associated with climate change is increasing, where Northern regions are more prone to its effects than other regions, local observation and expertise of Indigenous peoples are important components of understanding change. While scientists often perceive climate change in a global context (i.e. increasing global temperature, rising sea levels, etc.), it is important to evaluate and apply adaptations to local sociocultural contexts, in order to respond to specific community needs. Not only does TEK expand scientific implications of climate change, but it also elucidates complex interconnections of environmental and sociocultural systems that are thus

difficult to quantify.

Scientists who strive to develop a better understanding of climate change should consistently apply TEK in modern scientific research because it accentuates and develops a more accurate sense of social and cultural risks to the changing environmental conditions. Martello offers a lens into “changing ideas about climate change, not only as a physical phenomenon, but also as a social and cultural one” (369). Martello contends that looking beyond the conventional approaches to climate change, encompassing climate change as a “social and cultural phenomenon” validates the importance of adaptation and resilience. As climate change intersects with the cultural, social, and economic inequities amongst Indigenous groups, these peoples were driven to become resilient through adaptation to change. Mitigating climate change requires overcoming the long-standing inequities and Western dominance that already disempowers the voices of Indigenous peoples. Therefore, policymakers should consider expanding adaptation laws and programs that address social and cultural impacts of climate change that are relevant to indigenous communities. Huntington et al. reiterate this by stating:

An outsized focus on climate alone generates certain types of mitigation agendas, namely reducing greenhouse gasses by nations and corporations in the Global North, rather than addressing multiple and intersecting issues related to health, poverty, education, economic viability, cultural vitality, and justice. (1218)

For this reason, Huntington et al. argue that retaining an “outsized focus on climate change alone” can only implicate limited perspectives of climate change and, therefore, obscure the disproportionate impact among indigenous groups. Tying back to Martello’s description of climate change as a combination of “physical, social, and cultural phenomenon,” combating and adapting to climate change should include TEK as it takes a more holistic approach to intersect with other issues relating to changes in economic and social systems. Ultimately, scientists can utilize TEK as a bridge between understanding climate change impacts in social and ecological systems.

Although knowledge integration is shown to enhance scientific perspectives and adaptation efforts, conflicts can arise in integrating scientific and indigenous knowledge because both differ in orientation and conceptual models of climate change. According to an indigenous

activist and scholar from the Nishnaabeg nation, Leanne Betasamoske Simpson, these differences can lead to rising complications. Simpson notes, “Accumulation-based societies don’t like the answers [Indigenous people] come up with because they are not quick technological fixes, they are not easy” (qtd. in Harris). Although scientists recognize the benefits of indigenous solutions and their sustainable resource management, they continually prioritize quick technological fixes. Innovative technologies however have already transformed the way modern societies manage natural resources, leading to environmentally unsustainable practices such as intensive agriculture. Even if there is a growing integration of TEK, or Indigenous knowledge (IK), in modern science, “The potential of IK may be constrained when set within current development ideologies that are heavily influenced by politically dominant Western nations’ agendas” (Bohensky and Maru). Without an equal Indigenous representation in political agendas, scientists and researchers can easily manipulate the fundamental structures of how Indigenous knowledge is used and applied to an unchanged Western resource management system. Integrating TEK into modern resource management is an important step towards indigenous environmental decision and policy making, though it runs the risk of obscuring or disregarding core aspects of TEK. It is therefore imperative for policymakers to understand that TEK is more than just a tool for western-dominated policies. It consists of indigenous practices, intrinsic and spiritual values, and beliefs that are embedded in indigenous culture and identity.

INDIGENOUS REPRESENTATION IN GLOBAL CLIMATE POLICY

Knowledge integration can formulate conflicts between modern and indigenous societies and can be detrimental to Indigenous knowledge during its process. However, Northern Indigenous communities can contribute beyond scientific studies and more into climate change policies and initiatives relevant to disadvantaged communities. Even though few studies in the Arctic have examined opportunities for adaptation, this deficit can be challenged as there is an increasing need for additional policies on climate change adaptation than mitigation efforts alone. In “Adapting to the Effects of Climate Change on Inuit Health,” Ford et al. explain through the lens of TEK that “adaptation is about [...] tackling pathways that lead to ill health, building upon TK and cultural values,

and targeting the social determinants of health that are the root causes of many climate-related health vulnerabilities” (13). Ford et al. contend that adaptation is important to target health risks that pertain to social factors of climate change. This is not only prevalent amongst indigenous peoples, but also other disadvantaged communities, such as lower-income households and communities of color. Unlike Indigenous communities who have traditional knowledge in adapting to climate change, these marginalized communities in western societies are often more susceptible to health risks from climate change and thus have limited resources to cope. Therefore, due to similar health disparities regarding climate change, modern societies can implement adaptation-and-TEK-based policies to tackle health-related issues that are faced by both indigenous and modern societies. While it is important to bring opportunities for adaptation strategies into modern societies, it is equally as important for governments and international organizations to uphold TEK in adaptive policies. Some international organizations have recently acknowledged TEK as a reliable source to understand climate change. For instance, Alexander et al. implicates IPCC’s initial view of indigenous knowledge:

Because the IPCC is subject to intense public scrutiny, it tends to reply primarily on information from peer-reviewed scientific studies, and, in the past, has largely excluded traditional indigenous knowledge as a source of information for its assessment reports as a result of a general bias against evidence from non-peer-reviewed sources. (477)

Alexander et al. refer to traditional indigenous knowledge as “non-peer-reviewed sources,” and this implies that western scholars dominated the norms and agendas of climate change. On the contrary, IPCC’s Climate Change 2014 Synthesis Report proclaims that “indigenous, local and traditional knowledge systems and practices, including indigenous peoples’ holistic view of community and environment, are a major resource for adapting to climate change, but these have not been used consistently in existing adaptation efforts” (19). Interestingly, the report provides reference to indigenous knowledge and observations, yet it clearly addresses the complication of TEK in existing adaptation efforts. Therefore, this validates that governments should consistently use indigenous knowledge in adaptation policies that currently lack diversity and inclusiveness of local and cultural practices.

CONCLUSION

TEK reveals how cultural integration of indigenous and scientific knowledge can bring forth better initiatives that are relevant to disproportionately impacted communities. It is a way for indigenous peoples to challenge the dominant western environmental paradigm. It offers opportunities for indigenous peoples to be recognized as advocates, and to empower their indigenous rights often challenged through governance and rapid environmental change. The evaluation of vulnerability and adaptive capacity of indigenous communities can represent the complexity of climate change in a social-cultural context that is often neglected in scientific research. My research has shown that the issue of climate change is often seen primarily as an environmental phenomenon that accelerated in the recent decades, yet ecological degradation and social oppression are historically intertwined that further marginalizes indigenous groups and can ultimately diminish their culture and identity. To further push TEK into climate change policies rather than implementing the principles of TEK on behalf of indigenous communities, global organizations should have better representation of TEK holders and elders to participate in TEK research and their applications to climate change policies. Most importantly, education can preserve and protect traditional indigenous skills and cultures; it is a significant step toward empowering indigenous peoples and their rights to influence political decision-making processes. Governments should then provide funds for institutions to establish educational programs that enable indigenous youths to help promote traditional language and skills for cultural continuity. My research reveals that frameworks for vulnerability assessment and policies regarding TEK and adaptation strategies must be established to equally include the voices of Indigenous communities, and with the integration of indigenous and scientific knowledge, it applies the importance of inclusion and collaboration that will ultimately bring about a resilient and empowered indigenous community.

WORKS CITED

- Alexander, Clarence, et al. "Linking Indigenous and Scientific Knowledge of Climate Change." *BioScience*, vol. 61, no. 6, June 2011, pp. 477-84.
- Berkes, Fikret, and Derek Armitage. "Co-Management Institutions, Knowledge, and Learning: Adapting to Change in the Arctic." *Études Inuit Studies*, vol. 34, no. 1, 2010, pp. 109-131.

- Berkes, Fikret. "Context of Traditional Ecological Knowledge." *Sacred Ecology: Traditional Ecological Knowledge and Resource Management*, Taylor & Francis, Philadelphia, PA, 1999, pp. 3–14.
- Bohensky, Erin L., and Yiheyis Maru. "Indigenous Knowledge, Science, and Resilience: What Have We Learned from a Decade of International Literature on 'Integration?'" *Ecology and Society*, vol. 16, no. 4, Resilience Alliance Inc., 2011. JSTOR, <https://www.jstor.org/stable/26268978>.
- Brännlund, Isabelle, and Per Axelsson. "Reindeer Management during the Colonization of Sami Lands: A Long-Term Perspective of Vulnerability and Adaptation Strategies." *Global Environmental Change*, vol. 21, no. 3, Aug. 2011, pp. 1095-105.
- Ford, James D., et al. "Adapting to the Effects of Climate Change on Inuit Health." *American Journal of Public Health*, vol. 104, no. Suppl 3, June 2014, pp. e9-17. PubMed Central, doi:10.2105/AJPH.2013.301724.
- Ford, James D., et al. "Climate Change Policy Responses for Canada's Inuit Population: The Importance of and Opportunities for Adaptation." *Global Environmental Change*, vol. 20, no. 1, Feb. 2010, pp. 177-91. DOI.org (Crossref), doi:10.1016/j.gloenvcha.2009.10.008.
- Harris, Malcolm. "An Indigenous Critique of the Green New Deal." *Pacific Standard*, 4 Mar. 2019, <https://www.wrongkindofgreen.org/2019/04/18/an-indigenous-critique-of-the-green-new-deal/>. Accessed 5 Mar. 2021.
- Huntington, Henry P., et al. "Climate Change in Context: Putting People First in the Arctic." *Regional Environmental Change*, vol. 19, no. 4, Apr. 2019, pp. 1217-23.
- "Inuit." *Government of Canada*, 13 Feb. 2009, <https://www.rcaanc-cirnac.gc.ca/eng/1100100014187/1534785248701>.
- IPCC. "Intergovernmental Panel on Climate Change, Climate Change 2014, Synthesis Report." *Cambridge*, Cambridge University Press, pp. 1-32.
- Jaakkola, Jouni J. K., et al. "The Holistic Effects of Climate Change on the Culture, Well-Being, and Health of the Saami, the Only Indigenous People in the European Union." *Current Environmental Health Reports*, vol. 5, no. 4, Dec. 2018, pp. 401-17.
- Martello, Marybeth Long. "Arctic Indigenous Peoples as Representations and Representatives of Climate Change." *Social Studies of Science*, vol. 38, no. 3, Sage Publications, Ltd., 2008, pp. 351-76.
- Milazzo, Eleonora. "The Arctic: The Role of Indigenous Peoples." *ACCEL*, 15 Oct. 2014, accelfellowship.wordpress.com/the-arctic-the-role-of-indigenous-peoples/. Accessed 4 Mar. 2021
- Pearce, Tristan, et al. "Inuit Traditional Ecological Knowledge (TEK), Subsistence Hunting and Adaptation to Climate Change in the Canadian Arctic." *Arctic*, vol. 68, no. 2, June 2015, pp. 233-45.
- Raygorodetsky, Gleb. "The Skolt Sámi's Path to Climate Change Resilience." *Our World*, 1 Feb. 2013, <https://ourworld.unu.edu/en/the-skolt-sami-path-to-climate-change-resilience>.
- Riedlinger, Dyanna. *Community-Based Assessments of Change: Contributions of Inuvialuit Knowledge to Understanding Climate Change in the Canadian Arctic*. Jan. 2001, pp. 1- 139.
- Stepien, Adam. "Arctic Indigenous Peoples, Climate Change Impacts, and Adaptation." *E-International Relations*, 10 Apr. 2014, <https://www.e-ir.info/2014/04/10/arctic-indigenous-peoples-climate-change-impacts-and-adaptation/>.

Struzik, Ed. "Food Insecurity: Arctic Heat Is Threatening Indigenous Life." *Yale Environment* 360, 17 Mar. 2016, https://e360.yale.edu/features/arctic_heat_threatens_indigenous_life_climate_change.

"The Inuit." *Facing History and Ourselves*, <https://www.facinghistory.org/stolen-lives-indigenous-peoples-canada-and-indian-residential-schools/historical-background/inuit>. Accessed 2 May 2021.



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