31st annual

BEACON
CONFERENCE
SUNY Rockland Community College

20 23

Celebrating Student Scholarship at Two-Year colleges in the Mid-Atlantic region.

JUNE 2, 2023 • 8:00AM • SUNY ROCKLAND

145 College Rd. Suffen, NY 10901

On behalf of SUNY Rockland Community College, I would like to welcome you to the 31st annual Beacon Conference! After a few years of the conference being virtual as a result of the pandemic, we are thrilled to be hosting the Beacon Conference in-person for the sixth time at RCC.

The Beacon Conference was established in 1993 when RCC faculty worked in conjunction with faculty at several other community colleges in the area to procure a grant from the American Association of Community Colleges and the Kellogg Foundation to establish a conference for students at 2-year colleges. Since then, we have continued to recognize, celebrate, and showcase the academic achievements of outstanding students at community colleges in the mid-Atlantic region on the first Friday in June annually.

This year's conference drew 134 submissions from 12 colleges across four states including New York, New Jersey, Pennsylvania, and Maryland. Students submitted papers on a wide range of topics in 22 different disciplines. With guidance from their faculty mentors, the accepted students have worked diligently to refine their work for an interested audience. Today, we are not only excited to see these students present their original research in the 17 panels that will run throughout the day, but we also look forward to learning from each of them as they share their ideas in a professional setting (many of whom will be doing so for the first time) with peers, other community college professors, and even judges from four-year colleges and universities nearby.

To our student presenters, I would like to congratulate you on your achievement! To be accepted to present at a professional conference is a testament to the amount of hard work you have put into your studies. It is because of your dedication, originality, and courage that you were chosen by readers who are themselves professionals in their disciplines to represent your college today!

Dr. Susan Deer

Officer in Charge, Rockland Community College

SCHEDULE AT A GLANCE

2023 CONFERENCE

BREAKFAST & WELCOME
8:00 AM || Ellipse

Dr. Susan Deer, Rockland Community College, Officer In-Charge

SESSION 1: CONCURRENT PANELS || 9:15 AM - 10:45 AM

Allied Health, Arts Communications/ Media Studies, Computer Science, Interdisciplinary Studies, Literature 1

MORNING BREAK
10:45 AM - 11:00 AM

SESSION 2: CONCURRENT PANELS || 11:00 AM - 12:30 PM

Biology, History, International Studies / Globalization, Literature 2, Psychology 1, Sociology

MIDDAY/LUNCH BREAK
12:30 PM - 1:30 PM
Cafeteria

SESSION 3: CONCURRENT PANELS || 1:30 PM - 3:00 PM

Chemistry, Social Justice, Women's / Gender / LGBTQ Studies, Psychology 2, Philosophy and Religion

POSTER SESSION & COLLEGE TRANSFER FAIR
3:00 PM - 4:00 PM || CAC Atrium

AWARDS & CLOSING CEREMONY: Announcement of Panel Award Winners
4:00 PM - 5:00 PM || CAC Atrium

Allied Health

Judge: Dr. Kathy Burke, Ramapo College || **Room 8171**
Moderator: Nancy McMorrow
Presenters: Gabe Dirnbeck (Lehigh Carbon Community College), Cameron Smith (Lehigh Carbon Community College), Nathaniel Zellner (Lehigh Carbon Community College)

Arts

Judge: Ashley Gerst, MF, William Paterson University || **Room 8173 (Hyflex)**
Moderator: Sara Macel
Presenters: Daniela Benitez (Bergen Community College), Rebecca Soriano (Monroe Community College), Jasmine Hall (Montgomery College)

Communications/Media Studies

Judge: Tricia Lorquet-Monk,M.A.,MS.Ed, MF, Monroe Community College || **Room 8171**
Moderator: Beth Robinson
Presenters: Jacob Speer (Montgomery College), Karter MacLean (Montgomery College Rockville Campus), Emily Johnson (Reading Area Community College)

Computer Science

Judge: Dr. Ensela Mema, Kean University || **Room 8174**
Moderator: Chris Flatley
Presenters: Molly Smith (Lehigh Carbon Community College), Bryan Carter (Lehigh Carbon Community College)

Interdisciplinary Studies

Judge: Dr. Diane Dispagna, Dominican University || **Room 8373**
Moderator: Dr. Zenya Richardson
Presenters: Vincent Rotondo (Lehigh Carbon Community College), Tomas "Tommy" Thompson (Montgomery College), David Wilsea (SUNY Westchester Community College)

Literature I

Judge: Dr. Robert J. Mundy, Pace University || **Room 8375**
Moderator: Dr. Rachel Kraushaar
Presenters: Andy Ferguso (Westchester Community College), Diana Lopez (Westchester Community College), Summer Mai Li Suliman (Montgomery College)

Biology

Judge: Dr. Allison Mass Fitzgerald, New Jersey City University ||**Room 8171**
Moderator: Dr. Melanie Rie
Presenters: Isabella Westervelt (Bergen Community College), Bahameen Farrukh (Montgomery College), Emma Sabat (Rockland Community College)

History

Judge: Dr. Gene Fein, SUNY Purchase || **Room 8373**
Moderator: Dr. Christina Stern
Presenters: Cole Dirnbeck (Lehigh Carbon Community College), Nicole Oviedo (Lehigh Carbon Community College), Isaiah Gonsalves (Monroe Community College)

International Studies

Judge: Dr. Bruce Whitehouse, Lehigh University || **Room 8173 (Hyflex)**
Moderator: Sukbin Song
Presenters: Julianne Barros (Montgomery College), Rio Miura (Montgomery College), Ivanna Badra (Montgomery College - Rockville Campus)

Literature II

Judge: Colonel Tony Zupancic, West Point || **Room 8174**
Moderator: Dr. En-Shu Liao
Presenters: Mana Mehdizadeh (Bergen Community College), Liliana Hopkins (Bergen Community College), Jacob Nawy (Westchester Community College)

Psychology I

Judge: Sabrina Rieder, MA, Montclair State University ||**Room 8375**
Moderator: Peter Arvanites
Presenters: Sydney Kurtz (Dutchess Community College), David Stevens
(Lehigh Carbon Community College), Skylar Elinsky (Reading Area Community College)

Sociology

Judge: Shaun S. Nanavati, City University of New York || **Room 8172 (Hyflex)**
Moderator: Dr. David Lucander
Presenters: Wanjiru Ayatta (Montgomery College), Elizabeth Porter (Montgomery College),
Neha Jehangir (Montgomery College - Rockville Campus)

Chemistry

Judge: Dr. Connor Bilchak, Manhattan College || **Room 8171**
Moderator: Dr. Kamil Woronowicz
Presenters: EJ Nyameh (Montgomery College), Meena Niazi (Montgomery College), Xavier Guaman Duchi (Rockland Community College)

Social Justice

Judge: Dr. Dean Chen, Ramapo College || **Room 8175**
Moderator: Dr. Rebha Sabharwal
Presenters: Yoav Aharon (Bergen Community College), Carolyn Ferrer (Bergen Community College), Emili Gibson (Monroe Community College)

Women's/Gender/LGBTQ Studies

Judge: Dr. J.A. Myers, Marist College || **Room 8373**
Moderator: Dr. Katie Lynch
Presenters: Ana Sofia Paz (Montgomery College), Marielle Amigos (Montgomery College), Jianna Negron (Lehigh Carbon Community College)

Psychology II

Judge: Stacy Casden, MS, CASA, Pace University || **Room 8171**
Moderator: Sabrina Rieder
Presenters: Sarah Wooddell (Cecil College), Jasmin Cruz (Montgomery College), Jessica Sabau (SUNY Westchester Community College Honors College)

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Philosophy

Judge: Justin Lee, MFA, University of California Irvine || **Room 8173**
Moderator: Dino Ritsatos
Presenters: Kinbo Yu (Bergen Community College), Essi Kouakou (Montgomery College), Lior Schwartz (Rockland Community College)

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Glorianny Jimenez Valdez

Lehigh Carbon Community College

Diego Santos

Montgomery College

Michael DiGrado

Rockland Community College

Joshua Stawiarski

Lehigh Carbon Community College

Loukas Glover

Westchester Community College

Christiana Malizia

Rockland Community College

Celeste Copay

Montgomery College

Arnav Singh

Westchester Community College

Emily Olafson

Reading Area Community College

Sarah Inhoff

Lehigh Carbon Community College

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WE WOULD LIKE TO THANK OUR 2023 READERS

(LISTED IN ALPHABETICAL ORDER BY FIRST NAME)

Allison Carpenter - Northampton Community College

Bassam Romaya - LCCC

C. L. Costello - Reading Area Community College

Dana Gavin - Dutchess Community College

Eileen MacAvery Kane - Rockland Community College

Gina Costa - Bergen Community College

Heather Christy-Robinson - SUNY Orange Community College

Michael Hall - Dutchess Community College

Michele Iannuzzi - Sucich - SUNY Orange Community College

Natalia Lubarsky - Rockland Community College

Peter Arvanites - Rockland Community College

Rachael Weidlich - Northampton Community College

Rebha Sabharwal - Rockland Community College

Robert Koble - SUNY Corning Community College

Robin Musselman - LCCC

Sabrina Rieder - Rockland Community College

Samantha Dunn - SUNY Orange Community College

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SUNY ROCKLAND COMMUNITY COLLEGE'S 2023 CONFERENCE DIRECTORS

Dr. Meghan P. Nolan
Chair of Sam Draper Honors Program; Director of Reading and Writing Center; Assistant Professor of English

Dr. Kristopher Baker
Program Director of Science and Engineering; Professor of Biology

Kris Dougherty
Assistant Director of Reading and Writing Center; Instructor of English

BEACON STEERING COMMITTEE INSTITUTIONS/ MEMBERS (2022 – 2023)

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Cecil Community College
Kathy Weiss

Lehigh Carbon Community College
Jonathan Sponsler
Mary Engel

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Dr. Bettina Caluori

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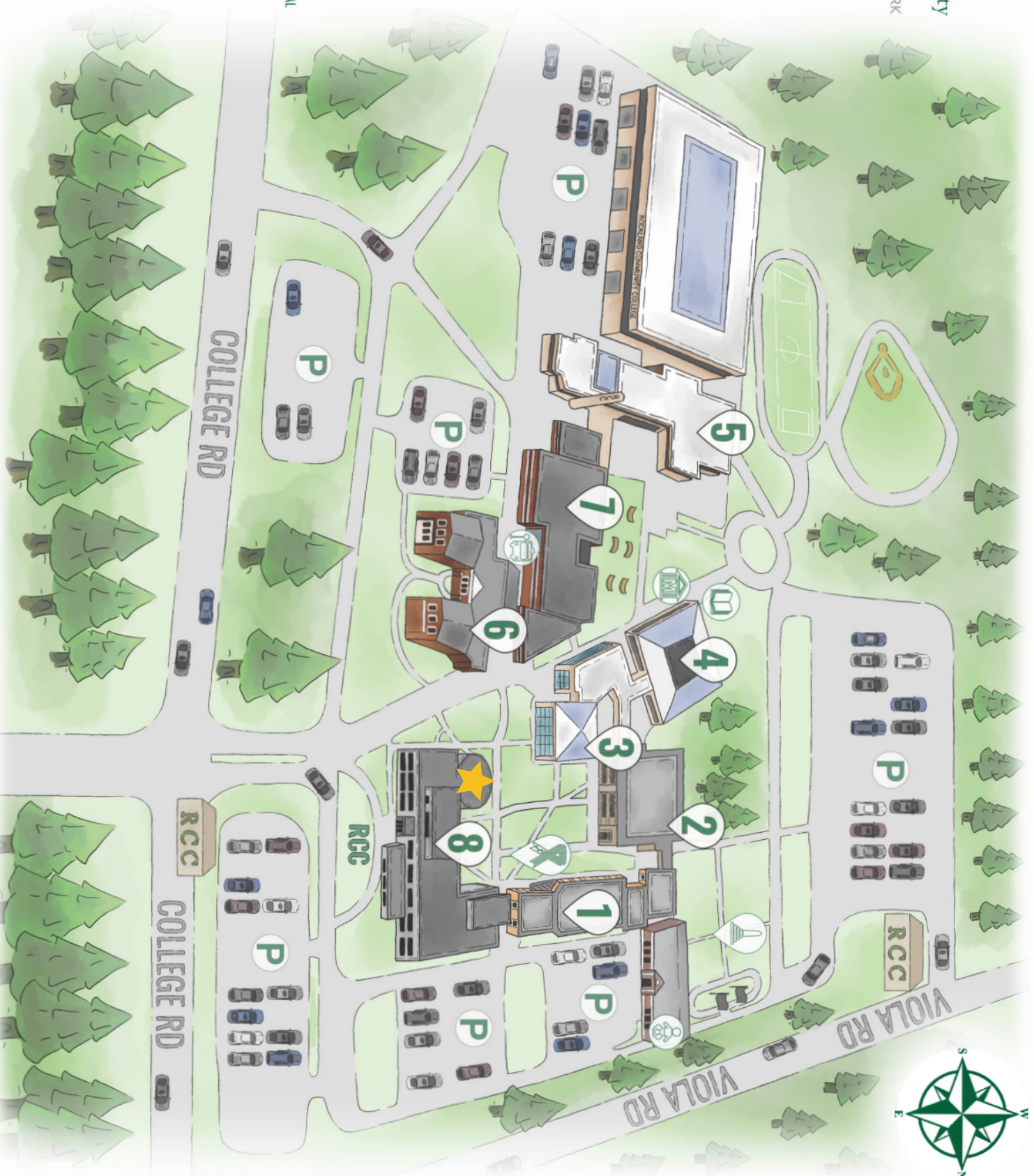**SCAD** The University for Creative Careers

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KEY

1 - ACADEMIC I
2 - ACADEMIC II
3 - STUDENT UNION
4 - LIBRARY
5 - FIELDHOUSE / POOL
6 - BRUCKER HALL
7 - CULTURAL ARTS CENTER
8 - TECHNOLOGY CENTER

THERESA MORAHAN SIMMONS CENTER FOR CHILDREN AND FAMILIES

BUS STOP

COLLEGE BOOKSTORE

HOLOCAUST MUSEUM & CENTER FOR TOLERANCE AND EDUCATION

GARY ONDERDONK VETERANS MEMORIAL CEMETERY

SEPTEMBER 11 MEMORIAL

To help you understand your room number, there are two rules to follow:
- The first number is the building, which corresponds with the numbers in the map key
- The second number is the floor number

⭐ **You start here**

COLLEGE RD

VIOLA RD

RCC

Christopher Raetz
Street Team Graphic Designer, Class of '23

THANK YOU

Hosting and organizing a conference is a LOT of work! We would like to thank the following individuals (in no particular order), because the 2023 Beacon Conference would not have been possible without them:

- **Celeste Sherry, Krista Quinn, and Joanie Asch** for running the Check-in Table.
- **Eric Magaram** for managing the Judge's Room for as long as he could while in obvious pain.
- **Peter Arvanites** for managing the Judge's Room, working as a last-minute backup Moderator, and being the best editor (as always)!
- **Fred Herbst** who had just begun working as a Dean at RCC, but hopped right in and helped everywhere, including morning setup and managing the Judge's Room.
- **Carol Coiro and Ginny Flatley** for managing ALL of the food for the conference. One day, they will open their own catering business and we all will support them for a change!
- **Mike DiGrado and Jon Galdamez Paguay** for being the best Honors staff and helping out with food setup, running things back-and-forth during the conference, and being the best bag stuffers and all-around helpers!
- **Melanie Rie** for stuffing a TON of bags, being a good friend by assisting in emergencies, and directing people as necessary, and **Maddy Rie** for acting as docent and directing traffic in the halls. (Sorry, Jake!)
- **Nancy McMorrow** for going way beyond her moderator duties and pitching in all over without even being asked. We are so glad to have you at RCC!
- **Rebha Sabrharwal and James Lee** for helping us to track down judges at the last possible minute.
- **Stacy Casden** for pitching in as a last-minute judge.
- **Sabrina Rieder and Shaun Nanavati** for their willingness to serve as backup judges… the day of the conference!
- **Rob Mundy and Tony Zupancic** for being the ultimate colleagues and team players by working out a panel error amongst themselves, thus avoiding what could have been a complete disaster!
- **Tony Zupancic and Robin Musselman** for donating their stipends back to the Beacon Conference fund.

- **Dani Kobryn and Amanda Feeney** for their amazing work on the program and signage printing.
- **Chris Plummer and Patty Maloney-Titland** for setting up the theater for the awards ceremony and making sure all went smoothly for it.
- **Rob Trupiano** at Follett/ RCC Bookstore who procured all of the gift cards, which allowed us to distribute awards and stipends easily.
- **Leo Paredes** in RCC Maintenance who helped us to rearrange things for the conference at the last minute, opened classroom doors in the morning, and did anything else we needed him to do on the day of the conference. He is always a joy to work with!
- **Jonathan Sponsler** from LCCC for sharing conference materials and always being willing to help.

OUTSTANDING PAPERS

Disclaimer: In the compilation of this Proceedings publication, every effort was made to maintain the formatting for each winning paper as close to the original paper as possible. Some slight alignment differences may be evident, but papers should be nearly identical to what was submitted to the 2023 Beacon Conference. With that said, <u>no corrections have been made to the content of the papers, including to the grammar.</u> Papers appear as they were submitted.

Allied Health

Cameron Smith
"Handling Viral Outbreaks Using Big Data"

Mentored by Mary Engel
Lehigh Carbon Community College

"Cameron's paper has longitudinal data, it is well researched, and the conclusions clearly aligned with the future of health care. He easily fielded questions and room discussion with other research."

Dr. Kathleen Burke
Assistant Dean of Nursing Program
Professor of Nursing
Ramapo College

<center>**Handling Viral Outbreaks Using Big Data**</center>

Abstract:

"Big Data" is a term used to describe large and complex amounts of data that is difficult to process through standard devices and technology. Often the use of algorithms and AI is implemented in combination with machine learning to sort through this data in order to distinguish patterns that analysts can then learn from. All around the world, Big Data is being used in health science fields as an effective means to track, manage, and contain the spread of ongoing epidemics and pandemics. Using Big Data, researchers are able to accurately determine where future outbreaks will occur, how severe symptoms will be, and it even helps to develop treatments for new and emerging viral outbreaks. Big Data is also being used retrospectively to learn more about past pandemic outbreaks and apply what is learned to the current ones the world is facing today. This paper explores the possibilities and the actual implementation of using Big Data to handle infectious outbreaks.

1. Short, and Long-Term use of Big Data To Track, Diagnose, and Treat COVID-19

SARS-CoV-2, or COVID-19, is a prime example of how Big Data is presently being used to take on an ongoing viral pandemic. At the beginning of the pandemic, a company called Infervision developed an algorithm that utilized machine learning that recognized patterns in CT images of lungs to help doctors diagnose lesions that are a result of coronavirus pneumonia[6]. Normal CT's need to be reviewed by doctors and trained specialists, which requires a lot of time that could be spent on treating other patients. The AI algorithm developed by Infervision solves this problem by being able to review and diagnose a patient's CT image results in as little as 10 seconds[6]. Another short term application of Big Data being used with COVID-19 is determining

where future outbreaks are going to occur using Social Media Search Indexes, or SMSI's. The SMSI's studied were searches made on social media for "dry cough, fever, chest distress, coronavirus, and pneumonia", which are common symptoms of a COVID-19 infection[8]. Using statistics gathered from these searches, data analysts were able to develop a formula to determine areas of COVID-19 outbreaks 6-9 days before they occur [8]. 6-9 days may not seem like a significant amount of time, but at the beginning of the pandemic when effective means for tracking the spread of the virus did not exist, algorithms and equations like this were able to offer some insight as to where healthcare professionals needed to allocate the appropriate resources. This algorithm was especially helpful due to the extremely long incubation period that COVID-19 exhibits. Being able to tell where a deadly virus is going to break out before symptoms are widespread is an incredibly impressive feat.

But this isn't the only way Big Data is being used to handle the COVID-19 pandemic, data analysts also used Big Data to develop antiviral treatments for patients. At the start of the pandemic, there were no approved therapeutic options for the treatment of COVID-19, but The United States already had a stockpile of many other antiviral therapeutic treatments. Researchers were able to use Big Data with artificial intelligence in order to determine which existing treatments could possibly be used to combat COVID-19. An artificial intelligence startup called BenevolentAI and the Imperial College of London grouped up to find an existing viral drug that could target COVID-19 by "(i) interfering directly with it, or by (ii) blocking/inhibiting its related biological process and events (such as viral entry and replication), or targeting human immune system, by (iii) enhancing it" [2].

This proved useful as baricitinib, an existing drug that is used to treat severe rheumatoid arthritis, was discovered as a possible treatment for patients infected with COVID-19. The AI

program discovered that baricitinib, an inhibitor of the janus kinases JAK1 and JAK2, exhibited antiviral properties [2], and all of this was done without human testing or spending money on developing a costly new treatment that would be hard to produce and distribute before lots of people were killed by COVID-19. Recently, the use of baricitinib as an immunomodulatory Treatment for COVID-19 was approved by the FDA [9]. An issue with COVID-19 is the severe immune response that the virus causes in an infected individual. Baricitinib is now being used as a drug to combat this issue by assisting in the treatment of individuals who are experiencing the severe symptom of troubled breathing [9]. This proved that the concept of using machine learning and AI to discover new treatments as a whole shows promise and may need to be implemented again should another new or emerging viral pandemic break out.

2. Using Google Flu Trends and Annual Data to Track and Develop Vaccines for Influenza:

Influenza, or the flu, is a virus that's been a major problem in the United States since the 1918 flu pandemic that resulted in about 50 million deaths worldwide [4]. Despite the devastation and destruction this virus has caused, it also provided us with an endless supply of data. The data researchers collect from the flu comes in the form of the sequencing of the viral genome, infection demographic information, hospitalization numbers, mortality rates and more. In fact, annual information on how the flu is mutating allows us to develop vaccines that cover different possible variants that are predicted to arise, or are already existing.

One way that Big Data is being used to combat annual influenza outbreaks is through something called Google Flu Trends, or GFTs. GFTs are essentially an algorithm that uses data from search queries for information related to the flu including searches about influenza-like illnesses (ILIs) in order to predict disease burden on physicians and hospitals in order to treat

infected individuals [3]. While this tool does help hospitals prepare and allocate resources needed to treat patients suffering from influenza or IFIs, the algorithm famously has had some severe errors over the years. The most infamous error with the GFT algorithm is back in 2014 when it predicted that the number of doctor visits for influenza would be doubled that year [3]. This is obviously a major flaw in the algorithm that may have led to allocating excessive amounts of limited resources that may have been wasted. GFTs are still being used, but it was found that they were able to minimize the amount of error present in the algorithm by incorporating statistics from the CDC's annual information in influenza outbreak numbers[3]. Using a combination of Big Data from search queries and statistical information from the CDC, GFTs are able to provide fairly accurate information on disease burden so that doctors and hospitals can allocate the appropriate amount of resources on an annual basis to treat infected individuals[3].

3. How Digital Surveillance is Used to Monitor the Spread Of Ebola:

We've also successfully implemented the use of Big Data to respond to the Ebola virus outbreak back in 2014. The major Ebola outbreak in 2014 provided a lot of information on how data analysts can use data from internet searches and google trends as a form of anticipatory technology to track the spread of the virus in underdeveloped countries [7]. Using this form of technology, analysts were able to learn a lot about how digital surveillance can be used to track outbreaks in general, and they applied much of what they learned to tracking the spread of covid and even influenza. Like influenza, the data for digital surveillance was largely collected from aggregations of Google searches for symptoms of Ebola [7]. The premise that this type of technology works upon is the fact that a symptomatic individual likely would search the internet for information on their condition prior to seeking medical help (depending on the severity of the symptoms and access to the internet) [7]. Unfortunately, noise from media coverage led to an

increased global interest in Ebola, which caused digital surveillance to be somewhat unreliable as a means to track the spread of Ebola [7]. However, researchers were able to look back on aggregations of search data for common symptoms of Ebola to find where the virus originated from prior to the global announcement of a new outbreak [7]. This is a great example of how Big Data can be implemented retrospectively to learn from past outbreaks to learn more about their origins. This type of data allows us to learn more about how viruses mutate over time and where they originate from.

4. Using "Wastewater Surveillance To Identify and Track the Spread Of Polio:

On a smaller scale, Big Data is being used to also test for the presence of different pathogens in something called "wastewater surveillance". Like other forms of Big Data surveillance, wastewater surveillance is being implemented in order to track the spread of various viral outbreaks, most notably: the polio virus. This type of surveillance works by testing waste samples collected from sewers around New York City. As of December 5th of 2022, 94 of the samples collected have tested positive for polio using PCR, and of those 94 samples, 87 have been found to be genetically linked to an individual case of paralytic polio [10]. This means that the variation of polio that is being spread around New York City is a strain that has the potential to cause paralysis. What's interesting about this is the fact that wastewater surveillance was first implemented to track the spread of COVID-19 during the height of the pandemic. It was only through random testing that researchers discovered the presence of the poliovirus [10]. This may not seem like an application of Big Data, but it's proven to be an effective method for tracking the spread of a life-altering viral outbreak, and it could easily be upscaled and implemented in cities all around the world to test for the reemergence of outbreaks that healthcare professionals thought were eradicated.

An advantage of this method of data collection is that all samples that are tested are completely anonymous, as it's not possible to trace even a component of a sample back to an individual or household [10]. It is possible, however, to trace how the virus mutates as it spreads, which is how researchers were able to determine that the spread of the specific strain of the polio virus that is present in New York City is from a single source. This is a huge deal since many methods of data collection being discussed in this paper have the potential to be traced back to certain individuals or households, which is a major invasion of privacy. Because of this, when collecting data from search indexes or other similar sources, data analysts need to be certain that the probability of identifying an individual is as close to zero as possible.

5. Using Big Data and Machine Learning to Determine the Effect Of Antiviral Drugs With HIV:

A common concern in the world of medical microbiology is the effectiveness of antibiotics over time with a given antibiotic. Unfortunately, viruses too have the ability to develop favorable mutations that leave them more resistant to the treatments researchers develop to inhibit them [1]. This is especially true in the case of HIV and using drugs that inhibit the reverse transcriptase enzyme, which is an essential enzyme that allows HIV to reproduce in a host's body [1]. Using machine learning, researchers are able to see which existing antiviral treatments for HIV have the highest potential to mutate when exposed to a specific type of treatment [1]. This is important because it allows us to simulate the long-lasting effects of using antiviral drugs and how it could affect how HIV could impact our society in the future. Right now, HIV is treated with a combination of different types of inhibitory antiviral drugs. By knowing which of the drugs in use leads to the highest probability of mutation, healthcare professionals can minimize the use of that drug and instead try different or new combinations of

drugs to treat the virus [1]. There's also a potential to use the data gleaned from this study to simulate how HIV could mutate in the future to proactively stay one step ahead of the virus and develop new treatments.

6. Discovering Seasonal Trends For Various Pathogens Using Big Data:

Another way Big Data is being implemented in order to identify trends in the spread of various pathogens is based on the climate that a host becomes infected with. Data analysts were able to cross reference infection rates for various different infectious diseases with seasonal climate changes and they discovered a positive correlation for many [5]. For example, researchers were able to determine that influenza outbreaks were more prevalent in cold and dry climates [5]. They were also able to conclude that the risk of contracting polio or a gastrointestinal disease was much higher in humid climates with lots of rainfall [5]. Another finding through the use of Big Data is that the risk of contracting salmonellosis, cholera, and giardiasis is higher in the event of extreme temperatures and floods [5]. Using Big Data to identify trends like this is incredibly useful for hospitals and healthcare professionals in order to prepare the appropriate resources to treat any potential outbreaks that may occur in any of these seasonal/climate related events.

Conclusions:

As long as we continue to collect massive amounts of data on different pandemics and epidemics, Big Data and Artificial Intelligence/machine learning will continue to be a viable solution for developing treatments, monitoring the spread of, and learning about past, present, and future viral outbreaks. Obviously there are some issues with using Big Data currently due to noise in algorithms and relying on unpredictable factors like social media search indexes, but this paper has proved that Big Data has potential and could be used supplementally to other methods

of real-time tracking of ongoing pandemic outbreaks. It is essential that we use the data we gather to continue to develop and perfect new and existing algorithms and other Big Data tools in order to prevent unnecessary loss of life. This paper discussed the application of Big Data in combination with machine learning and artificial intelligence to develop algorithms and other tools to assist doctors in tracking the spread of outbreaks, developing treatments for outbreaks, and more. It is likely that as we continue to collect massive amounts of data and the healthcare industry continues to expand, we will begin to see the Big Data industry merge into healthcare.

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Arts

Rebecca Soriano

"God the Mother and the Feminine Christ:
Representations of the Madonna and Jesus as Divine Maternal
Nurturers in Medieval and Renaissance Art"

Mentored by Scott Rudd
Monroe Community College

"Rebecca's paper and presentation provided an impressive correlation of religious iconography and art identified the Medieval and Renaissance time periods. Her detailed analysis regarding the symbolism of sacrifice, dichotomous colors, and mandorla is particularly worth noting."

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God the Mother and the Feminine Christ: Representations of the Madonna and Jesus as Divine Maternal

Nurturers in Medieval and Renaissance Art

Visual depictions of the Virgin Mary and Jesus Christ throughout the Medieval and Renaissance periods frequently highlight and celebrate key characteristics commonly associated with femininity: compassion, nurture, and sacrifice. Although canonical scriptural language employs the usage of "father" and "son" to denote the gender of God and Jesus, subsequent archetypal artistic interpretations produced during these periods expressed the divine feminine energy of God manifested within the earthly bodies of the Madonna and Christ. The all-powerful, dominant, and authoritative qualities of God have become the standard dogma to which modern Catholic leaders adhere. However, these masculine ideals run counter to the core tenets of Christ's teachings of love, charity, sacrifice, submission, and nurture which are commonly classified as "feminine," as seen in early Medieval theological texts. Caroline Bynum notes that Medieval spiritual writers characterized maternal imagery with consistent gendered sexual stereotypes (*Jesus as Mother* 148*).* Across these texts writers labeled traits like gentleness, love, compassion, and nurturing as "female" or "maternal" while authority, judgement, and strictness are gendered as "male" or "paternal" (148). Bynum argues that male Medieval writers, leaders, and theologians originated the use of feminine maternal imagery and allegory to reference both God and Jesus, citing figures like Anselm, Bonaventure, Aquinas, and Julian of Norwich as examples of male spiritual leaders feminizing religious language (140). In Scripture, Jesus refers to himself as a mother hen who shelters her chicks[i] and the good shepherd who gathers lost sheep[ii], traits which writers in this period characterized as feminine. The interpretation of these passages indicate that Jesus Christ's maternal nature exists within an exterior of the physical masculine form. These more fluid expressions of gender within early Medieval scripture and theological writings differ dramatically from how the modern Catholic church interprets and transmits aspects of God and Christ's nature, often over emphasizing the masculine, authoritative aspects of both figures.

The patriarchal nature of the institution of Christianity creates a hierarchal division between male and female congregants, with Catholicism having a deep-rooted history of excluding women from holding positions of power within the clergy by creating sanctions against any possibility for ordination. On the history of gender bias and the Catholic Church, Cheryl Haskins argues that while Christianity promotes

concern for female congregants it remains unwilling to allow these members to serve the Church in equal or higher stations over men (100). Under Pope Paul V, the Sacred Congregation for the Vatican[iii] issued an official declaration barring women from priesthood, maintaining that the act of conferring priestly ordination exclusively to men remains an unbroken tradition of the Church, and cites the absence of female apostles selected to minister as scriptural validation for their argument (Seper). Cardinal Franjo Seper, who authored the declaration on behalf of the Sacred Congregation asserts, "Although the Blessed Virgin Mary surpassed in dignity and in excellence all the Apostles, nevertheless it was not to her but to them that the Lord entrusted the keys of the Kingdom of Heaven" (Seper). The official and unwavering position of the Vatican dictates that their normative character of exclusively ordaining men into priesthood can be traced to Christ's denial of women into apostleship roles in scripture. Preventing the ordination of female priests creates a limitation for a woman's ability to be regarded on equal footing as their male counterparts within the institutional practices of Catholicism.

The Church maintains a cognitive dissonance in its view of the role of women within the structural framework of ministry, recognizing the importance of feminine figures like the Virgin Mary and Mary Magdalene within the Bible while relegating female congregants to a lesser station compared to their male counterparts. In fact, it was Mary Magdalene who was chosen by Christ to deliver the news of the resurrection to the apostles[iv]. These gendered divisions create an environment where the male-dominated leadership of the Church projects females as lesser and therefore subservient to males, contrary to the Biblical assertions that women were equally created in God's image[v]. Scripturally, the androcentric gendering of both God and Jesus Christ has impacted and limited the station of women within the Church, creating a divisive hierarchy which places women subservient to men. In the Old Testament, humankind was created devoid of these socio-cultural concepts. Genesis indicates, "So God created mankind in his own image, in the image of God he created them; male and female he created them" (*Genesis* 1:27). Using allegory and poetic language, scripture depicts God with both masculine and feminine aspects reflected in the body of each person, and different biblical texts emphasize and glorify the feminine spirit[vi]. The book of Proverbs portrays Divine Wisdom— the first of God's creations before humankind—as feminine, and she refers to believers as her children. She calls out, "For those who find me find life and receive favor from the Lord" (*Proverbs* 8:35). This passage, ascribed to Wisdom, is

reminiscent of the teachings of Christ on Earth, who preaches that salvation comes from knowing him[vii].

Often referred to as "Sophia," the Greek word for wisdom[viii], Divine Wisdom represents the Word of God which is made flesh[ix]. In his 4th century work *Orations Against the Arians,* Bishop Athanasius of Alexandria continually connects the Wisdom (*Sophia)* with the Word (*Logos),* which was delivered unto the world in the body of Christ (Athanasius 1). These theological interpretations of scripture suggest that the immaculate conception transforms the feminine *Sophia*—who existed alongside God in Heaven—into the masculine body of Christ on Earth birthed through the Virgin.

Despite normative traditional roles upheld by the Vatican and disseminated by exclusively male Catholic leaders, Christological iconography from the Medieval through Early Renaissance period frequently portray the Virgin Mary as the Divine Mother, equal to God, and Jesus Christ as feminine nurturer, physical embodiment of *Sophia.* Both figures become representations of God's feminine energy incarnate through thematic symbolism across culture and over centuries. These allegorical feminine representations of God's image and word incarnate serve as a counterbalance to God's authoritative masculine qualities and offer a more rounded and robust reflection of the scripturally androcentric Holy Trinity.

The veneration of Mary began in the early Medieval period[x], when St. Proclus delivered a homily during the Council of Ephesus[xi] proclaiming, "The reason we have gathered here today is the holy *Theotokos*[xii] Virgin Mary, immaculate treasure of virginity, spiritual paradise of the second Adam, workshop of the union of [Christ's two] natures, [...] bridal chamber in which the Word was wedded to the flesh, living bush that was not burned by the fire of the Divine birth" (Alessio). St. Proclus' homily both defined the hypostatic union[xiii] of Christ's dual nature and confirmed Mary as the mother of God and intercessor between humankind and the divine. Marian theology developed and grew from this council and by the late Medieval[xiv] period Christian art deified and celebrated her as a figure of absolute purity, born outside of original sin[xv]. From this point forward she was recast from the humble bearer of the Christ child to the nurturing and merciful Divine Mother.

Mary's significance within Christian ideology can be seen in the artistic portrayals throughout these periods. Italian artist Olivuccio di Ciccarello's *Madonna of Humility with the Temptation of Eve,* painted circa 1400 CE., uses proportion, color, and scale to emphasize the importance of the Virgin Mary (Fig. 1).

Depictions of the "Madonna of Humility" were common in Italian art during the 14th century, and show Mary seated on a low cushion or directly on the ground holding the Christ child ("Madonna of Humility"). Ciccarello's painting presents the Madonna in this traditional pose surrounded by twelve golden circular inlays, each containing one of Christ's apostles. Contrary to the Church's patriarchal practice of exclusively male leadership, the sheer dominance and scale of Mary compared to the surrounding Apostles creates a visual hierarchy signifying her as the pinnacle of virtue, purity, and worthiness above all others. Below the Virgin and Child in a panel segregated by darkness lies Eve whose consumption of the forbidden fruit cursed humanity to hardship and temporal life[xvi]. The artist, like the Church, uses the constant comparison between Eve and Mary to emphasize the necessity for salvation.

The Virgin Mary, full of God's grace, bears the savior of humankind and breaks the curse of Eve, allowing Christian souls the opportunity for redemption and eternal life. Ciccarello uses rare blue pigments and inlaid gold paint throughout the Virgin's robe and mantle which further accentuates her divine nature and distinguishes her apart from the naked and shamed Eve. Artists working within these periods used color as a visual indicator of status and significance, with ultramarine blue—a rare pigment made from the lapis lazuli stone[xvii]—frequently employed when painting the Madonna, Christ, or God. Paintings portraying the Virgin Mary and God within the same panel routinely depict both figures in similar dress, drawing a visual parallel between the two beings. Giovanni del Biondo's *Crucifixion with God the Father* (Fig. 2) and Albrecht Durer's *Adoration of the Trinity* (Fig. 3) are two examples, across period and location which feature this divine mirroring of garments between the Virgin Mary and God. The use of rare ultramarine blue pigment to depict these figures communicates a sense of equality and similarity between the two, with Mary being elevated to a station beyond mother of Christ but also the mother of humankind, counterpart to God.

Along with the use of color to present the Virgin Mary as divine, the late Medieval period[xviii] marked the prevalence of the *Madonna Lactans*—or the "Nursing Madonna"—a series of specific Marian imagery depicting the Christ child nursing at his mother's breast. Examples of these *Madonna Lactans* motifs can be seen in Barnaba de Modena's *Madonna and Child* (Fig. 4), Jan Van Eyck's *Lucca Madonna* (Fig. 5), and Gerard David's *Rest on the Flight into Egypt* (Fig. 6). These depictions, although distinct in both style and technique, maintain a thematic resonance. Mary sits with the child nursing in her lap, often with her

hand cupped over her breast and her head bowed, signifying a reverence for the child savior. She maintains a soft and knowing expression, sharing an intimate moment between mother and child. The Virgin Mary, divine intercessor and mother, must raise and nurture a child for the salvation of humanity. These works show a gradual shift away from the Byzantine period's distinct, highly embellished, and stylized representations of Madonna and Child iconography. Unlike Modena and Van Eyck, David's figures are firmly rooted in the realm of realism, with the Virgin Mary seated not on a throne surrounded by halos and gold, but humbly set on the ground with her infant child. In David's work the signifier of status comes not from a golden halo but her defining blue robes, emphasizing the sacred relationship between the mother and child without the gilding. Clothed in the traditional red and blue robes which denote her sanctity, the *Madonna Lactans* iconography depicts the hypostasis of Mary as both physical and divine mother: God's wisdom and will enfleshed. This union of the human and divine parallels the dual nature of Christ—the living word of God within the body of a man—and elevates Mary to the status of a co-redeemer of humanity through the physical acts of birth and nurture.

St. Augustine reflects on the act of nursing in his *Confessions,* writing, "The comforts of human milk were waiting for me, but my mother and my nurses did not fill their own breasts; rather you [God] gave me an infant's nourishment through them [...]" (Augustine *Confessions* 1:6). St. Augustine regards the milk of a mother as a spiritual fluid which God provides within the breast to nourish a child. The act of nursing then becomes both a physical and divine act, creating a sacred bond between the mother, child, and God. The Madonna embodies the same characteristics of Christ and his teachings: divine love, charity, and obedience to God's will. The iconography of the nursing Madonna connects the virginal milk which nourished the Christ child to the salvific sacrificial blood Jesus would later shed on the cross. In the New Testament, the Apostle Peter details how the "new birth"—also referred to as being "born again"—is achieved not through empty things like silver and gold, but "with the precious blood of Christ" and directs followers to crave the "pure spiritual milk" provided by the Lord which leads to salvation (*1 Peter* 1:18-19, 2:2). The scripture specifies that Christ's sacrificial blood acts as the essential fluid which is required for a spiritual rebirth and ultimate salvation. The conceptual rebirth of the spirit alongside the iconography of the *Madonna Lactans* create a visual parallel between the Passion of the Christ and the Passion of the Virgin, co-redeemers and idealized maternal nurturers.

Author Catherine Bynum discusses the Medieval biological theory of bodily fluids in her essay *The Body of Christ in the Later Middle Ages.* She notes, "Ancient biologists thought that the mother's blood fed the child in the womb and then, transmuted into breast milk, fed the baby outside the womb as well" (420). Early scientific understandings of biological functions created analogous descriptions of body fluids in both visual iconography and theology, drawing direct correlations between blood and breastmilk as methods of both physical and spiritual nourishment. The Medieval conceptions of bodily fluid and transmutation furthered the ideology that Christ's body and blood could then become the sacrament for the salvation of the Ecclesia[xix]. Transitioning from infancy to resurrection, Christological iconographic painters create a visual equivalency between Mary's breastmilk and Christ's blood by depicting Jesus cupping his wound—located just below his right breast—with head slightly bowed. This positioning mirrors the *Madonna Lactans* depictions, highlighting the ultimate maternal virtues associated with the act of nurture: infinite love and charity[xx]. Examples of the specific imagery of Christ displaying his sacrificial blood, commonly referred to as the *Man of Sorrows* iconography, can be seen in Meister Francke's *Man of Sorrows* (Fig. 7) and Hans Memling's *The Virgin Showing the Man of Sorrows* (Fig. 8). Memling depicts the agony and suffering of the co-redeemers, recalling images of the Virgin and Child in his infancy. In Medieval theology, St. Catherine of Siena refers to the blood of Christ as "essential milk" which flows from the breast, echoing the *Man of Sorrows* iconography and the transubstantiation from blood to sacrament (Catherine 38). These images, paired with earlier depictions of Mary, show the mutual suffering of the mother in the form of the Madonna and the adult Christ. In Memling's painting, Mary presents her child for the nurturing of the Church instead of her breast for the nourishment of the infant savior as seen in earlier *Madonna Lactan* images, directly connecting the breastmilk of the Madonna to Christ's blood, creating a visual equivalence signifying physical and spiritual nurturing. As the Virgin nursed the Christ child, Christ will then nurture the ecclesia through his breast wound and blood.

Depictions of the *Man of Sorrows* throughout the Renaissance period often include a chalice which captures the sacrificial blood of Christ, sometimes held by angels as seen in Giovanni Bellini's *Blood of the Redeemer* (Fig. 9), or freestanding as in Jacob Cornelisz van Oostsanen's *Man of Sorrows* (Fig. 10). These examples, along with many other *Crucifixion* icons, use the chalice to collect the sacred blood which, through the act of transubstantiation conducted by a Priest, becomes the salvific Eucharist[xxi]. The

holy milk-blood of the savior demands an honorable and pure golden vessel for the eventual salvation of humankind. Representations of Christ as the *Man of Sorrows* are consistently delicate in their rendering, contrasted with the graphic imagery of sacrificial blood flowing—or often spurting—from the wound. Christ gently holds open the wound in a manner that seems presentational, a visual offering of nourishment and charity. His maternal act translates visually into the divine love for humanity, depicted in graphic detail paired with tears of compassionate understanding.

Medieval and Renaissance artists frequently depicted Jesus as a maternal figure for the Church, whose physical act of submission and bodily sacrifice ushered in the birth of Christianity. Artistic expressions of this maternal nature are explored in the interpretation and depiction of the wound of Christ. Medieval illustrated manuscripts and prayer books present Jesus' wound as a disembodied vertical gash, making a direct comparison to the vagina (Fig. 11.1, 11.2, 11.3). These illustrations break from the traditional normative gendering of Christ to portray a fully realized feminine wound which gives birth to Christianity. The French *Psalter and Prayer Book of Bonne de Luxembourg* and English *Book of Hours* feature these eschatological vaginal wounds, often surrounded by the implements of Christ's crucifixion, which would remind the reader of the Passion. The *Bible Moraliseé* (Fig. 12) juxtaposes two images to illustrate Christ as the divine mother of the Church. The top image depicts Eve being birthed from Adam's side while the lower shows the Ecclesia emerging from Christ's wound before the deposition. In both illustrations God acts as midwife for the delivery, witnessed first by the animals in the Garden of Eden and then by a small collection of Church leaders. These artistic interpretations express less rigid and dichotomous conceptions of gender which contradict the strictly androcentric scriptural language of Christ as both physically and conceptually male.

Images of the vertical wound of Christ not only tie his blood and sacrifice to breastmilk and birth, but also reference the assumption[xxii] of Mary and Christ into Heaven. The shape of the wound transitions from vaginal to divine through artistic renderings of the assumption of Mary. Although only alluded to in scripture, Pope Pius XII confirmed the dogma of the assumption of Mary in the Apostolic Constitution[xxiii] encyclical *Munificentissimus Deus,* outlining the unique assumption of Mary as the will of God[xxiv]. The mandorla, an almond-like shape, became an important symbol for visually indicating the high status of divinity, tied to the mathematical perception of the circle as a perfect form. This shape was derived from

the Pythagorean geometric lens called a "vesica picis" or "fish bladder," formed by the intersection of two circles with the same radius (Sparavigna 1). This shape was transformed into the Christian "mandorla" in art, becoming a symbol of God's Divine Glory in the same manner other neo-Platonic ideas were adopted into Christian concepts (5). Not only does this shape perfectly mirror the vaginal wound of Christ, but also the universally recognized "ichthus" fish which became a secret symbol for Christ during the age of persecution[xxv]. Unlike the more commonly used halo to denote holy figures, artistic interpretations of the assumptions use the mandorla to encapsulate the entirety of the bodies of both the Virgin Mary and Christ in a way that visually links the shape to Christ's wound. Reiterating the connection between blood, birth, and divinity in a single geometric form.

Seen throughout the late Medieval and Renaissance periods in art, notable examples of these mandorla assumptions are found in Don Silvestro dei Gherarducci's *Assumption of the Virgin* (Fig. 13), Pietro Perugino's *San Francesco al Prato Resurrection*[xxvi] (Fig. 14), and Bartolomeo Vivarini's *Death of the Virgin* (Fig. 15). Gherarducci *Assumption* and Perugino's *Resurrection* each depict their figures hovering above opened and empty stone tombs, encased in the mandorla, and surrounded by angels. Although distinctly different in style—one more Byzantine and the other closer to traditional Renaissance realism— these organization of figures and elements share a definitive consistency in their glorification of these two maternal figures within the divine vaginal shape of Christ's wound. Unique to the three examples, Vivarini's *Death of the Virgin* offers a more complex depiction of Mary's assumption. At the base of the image Mary's body lies surrounded by the twelve mourning apostles along with Saint Lawrence and Saint Stephen (Vivarini). Above these figures Christ sits with a miniature Mary in his lap, carrying her body into Heaven inside the holy mandorla. This image recalls the familiar Virgin and Child iconography in reverse. Christ has become the mother who protects her child from death, wearing pink robes and enclosed in a blue mandorla, mirroring the earthly Mary's garments. From the Divine Wisdom of infancy into the afterlife, across scripture and the visual arts, Christ reflects the divine feminine in all aspects.

Abstractions of gender exist within scripture and subsequent theological discussions surrounding Christ and his teachings. However, the Vatican's immutable stance on patriarchal leadership seems to ignore and constrict the physical feminine over the divine feminine characteristics of Christ's word. Relegating women into a lower station within the structure of the Church and deeming them unequal to men in their

capacity to minister diminishes the significant role divine feminine energy plays in reflecting the full and robust image of God. An ideology which espouses an exclusively male trinity neglects the original interpretations of both God and Christ who are scripturally outside of normative gender constructs.

The pre-translated Hebrew language used to describe the essence of the Old Testament God incorporates both masculine and feminine imagery in equal measure. The word "Ruach" is a feminine gendered word used to describe the spirit while the word for God is the masculine "Elohim" (Schaupp). The *Ruach Elohim*—which translates to "holy spirt," defining one third part of the trinity—combines the gendered masculine and feminine into one entity, signifying the divine unification of both essences through language. According to Hebrew scholars, the Spirit cannot be identified with the gendered *He* pronoun, signifying a linguistic necessity to communicate the concept of God outside of gender (Schaupp). Scripture frequently uses feminine allegorical language and imagery to balance the androcentric language of God the Father and Christ the Son, using symbolism to untether both entities from the constrictive categorizations of human gender[xxvii].

Later Neoplatonic philosophical concepts further described and defined the soul as a genderless/neutral entity. Theologians like St. Augustine would refer to this Platonic ideal that the soul and especially its highest, intellectual part is not gendered (Tornau). Citing the promise of the Apostle Paul that in Christ "there is neither male nor female"[xxviii] Augustine argues that women are equally like men because the genderless intellectual soul, not the physical body, is the true reflection of God's image (Augustine *Genesis).* Throughout the bible God acts as both the spiritual Father and Mother of humankind, with the Virgin Mary and Christ enacting his will on earth. Although translations define God's gender as male, the recurring use of feminine allegory within scripture poetically infuses the maternal aspects into the essence of his spirit. The figures of Mary and Christ are God's gender incarnate, each acting as co-redeemers and intercessors between humankind and the divine, reflected in both scripture, theology, and the visual arts.

While the Church's practices and ideology remained institutionally patriarchal, in actuality Christological iconography during these periods shows a consistent pattern of glorifying the feminine qualities present within the Madonna and Christ. These depictions exist as visual reminders of spiritual unification between masculine and feminine energies, which reflect a more complete image of God's divine nature. Iconographic paintings of the Virgin Mary and Jesus venerate and sanctify the relationship between

mother and child and stand in contrast to the androcentric gendering of the holy trinity that permeates Christian theology.

Fig. 1. Ciccarello, Olivuccio. *The Madonna of Humility with the Temptation of Eve.* 1400, *Cleveland Museum of Art*, Cleveland.

Fig. 2. del Biondo, Giovanni. *Crucifixion with God the Father.* 1375-1380. *Memorial Art Gallery,* Rochester.

Fig. 3. Durer, Albrecht. *Adoration of the Trinity.* 1509-1511. *Kunsthistorisches Museum*, Vienna.

Fig. 4. Modena, Barnaba. *Madonna and Child*. 1370. *Louvre Museum*, Paris.

Fig. 5. van Eyck, Jan. *Lucca Madonna.* 1437. *Stadel Museum*, Frankfurt.

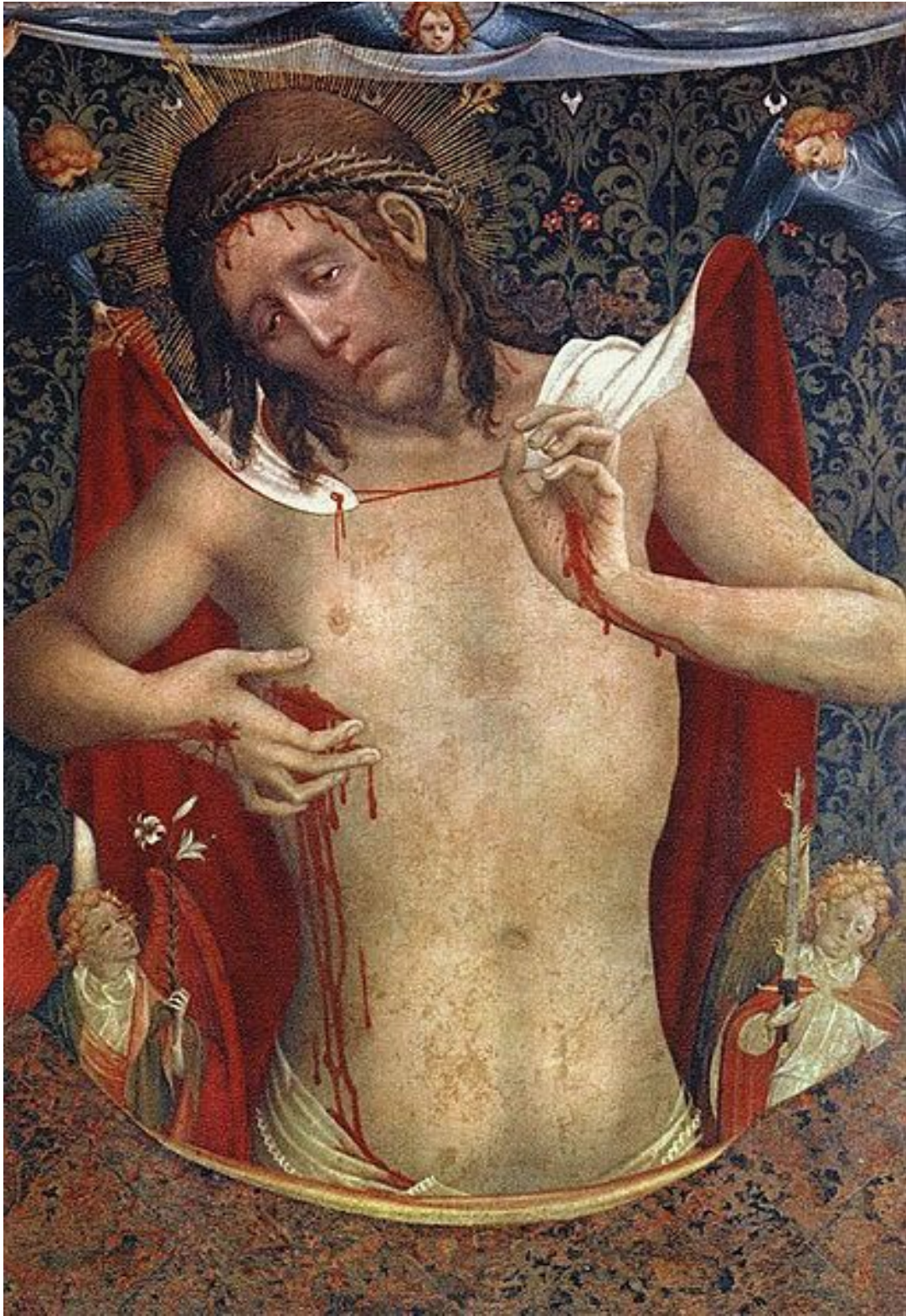Fig. 6. David, Gerard. *Rest on the Flight into Egypt.* 1512-1515. *Metropolitan Museum of Art,* New York.

Fig. 7. Meister Franke. *Man of Sorrows.* 1435. *Hamburger Kunsthalle*, Hamburg.

Fig. 8. Memling, Hans. *Virgin Showing the Man of Sorrows.* 1480. *National Gallery of Victoria,* Melbourne.

Fig. 9. Bellini, Giovanni. *Blood of the Redeemer.* 1460-1465. *The National Gallery,* London.

Fig. 10. Cornelisz van Oostsanen, Jacob. *Man of Sorrows.* 1510. *Museum Mayer van den Bergh,* Antwerp.
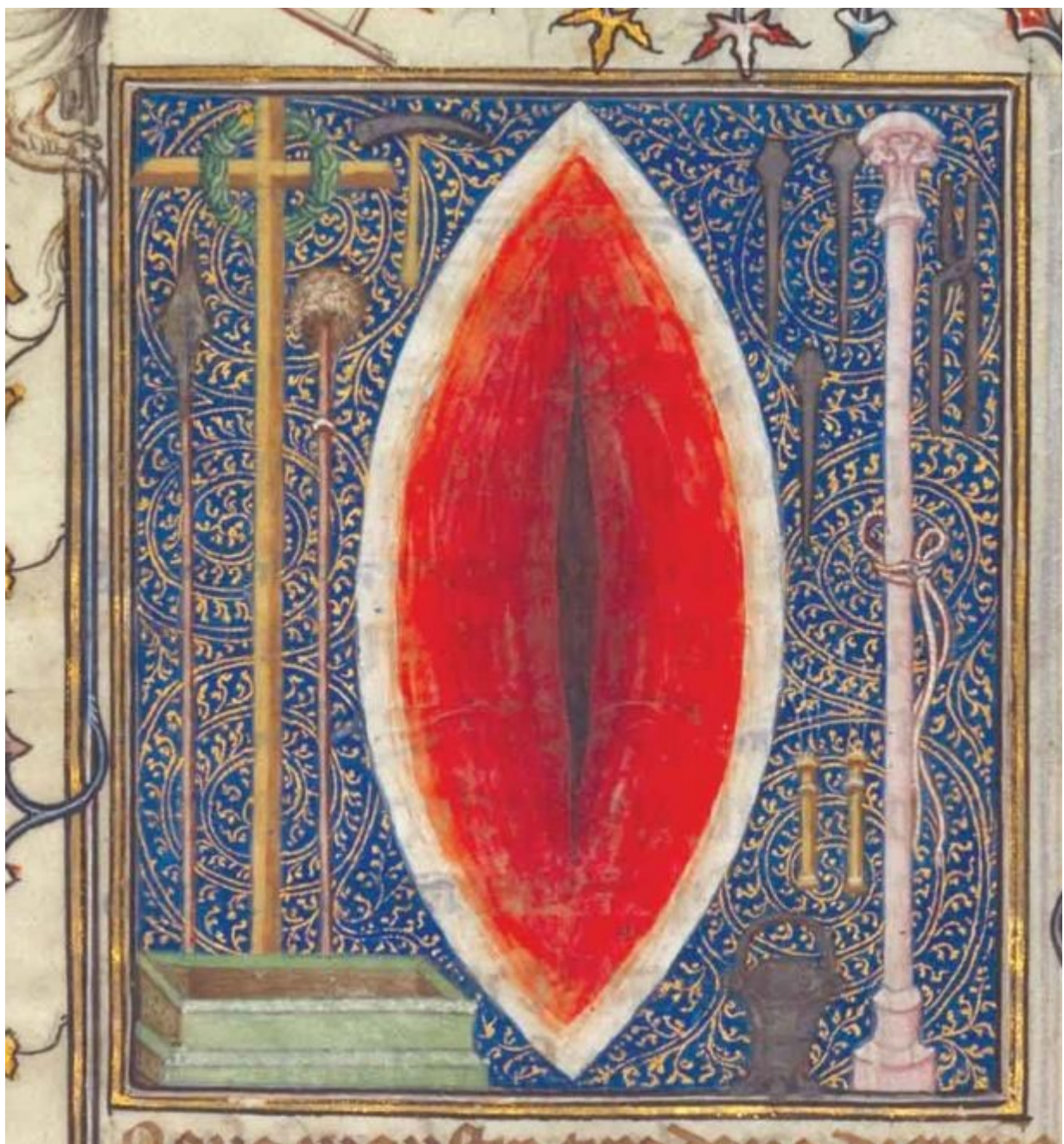
Fig. 11.1. le Noir, Jean. *Prayer book of Bonne de Luxembourg.* 1349. *Metropolitan Museum of Art,* New York, Cloisters Collection.

Fig. 11.2. Unknown artist. *Book of Hours* (England or Netherlands)*. 1410. *Oxford Bodelian Manuscript Library*, England.

Fig. 11.3. Unknown Artist. *Book of Hours* (Latin)*. 1369. *Biblioteque Nationale de France,* Paris.

Fig. 12. Unknown Artist. *Bible Moralisee* (French). 1220-1230. *Österreichische Nationalbibliothek*, Vienna.

Fig. 13. Gherarducci, Don Silvestro. *Assumption of the Virgin.* 1365. *Pinacoteca Vatican,* Italy.

Fig. 14. Perugino, Pietro. *San Francesco al Prato Resurrection.* 1499. *Pinacoteca Vatican,* Italy.

Fig. 15. Vivarini, Bartolomeo. *Death of the Virgin.* 1485. *Metropolitan Museum of Art,* New York.

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[i] *Matthew* 23:37.

[ii] *Ezekiel* 34:12-16.

iii Established by Pope Paul III in 1542, the Sacred Congregation is a permanent committee of cardinals in the Vatican who are tasked with handling the business of the Church ("Sacred Congregations").

iv *John* 20: 11-18.

v See *Galatians* 3:26-28.

vi For examples of feminine allegory and God see: *Numbers* 11:12*, Deuteronomy* 32:18*,* and *Isaiah* 42:14, 49:15*,* 66:13*.*

vii For examples of these teachings see: *1 John:* 11-12*, John* 14:16*, John* 8:12, *Acts* 2:38.

viii The Greek *Sophia,* grammatically feminine, translates to divine wisdom, holy wisdom, or wisdom personified ("Sophia").

ix Examples in scripture: *John* 1: 1-4, 14, *1 Corinthians* 1:24.

x 400-700 CE., with the homily of St. Proclus occurring around 428 CE.

xi Council of Ephesus: Three assemblies held by bishops to address problems in the early Christian Church ("Council of Ephesus")

xii Greek: "God-Bearer." Eastern Greek Orthodox designation of the Virgin Mary as the mother of God.

xiii In Christian theology, the hypostatic union refers to the biblical doctrine that within Christ exists two distinct yet inseparable natures: human and divine (Slick). For scriptural evidence see also *John* 1:14, *John* 10:30, *Colossians* 2:9.

xiv 1300-1500 CE.

xv Pope Pius IX decreed in his encyclical *Ineffabilis Deus* that, according to the scripture "[...] the soul of the Blessed Virgin, in its creation and infusion into the body, was endowed with the grace of the Holy Spirit and preserved from original sin" (Pius IX). For scriptural example see *Luke* 1:28.

xvi See *Genesis* 3:16-22.

xvii Earliest known use as a pigment date back to the 6th century, however lapis lazuli gained popularity during the 14th and 15th century paintings, often reserved to color the garments of the Virgin Mary, Christ, and God ("Ultramarine").

xviii Although Madonna and child imagery has been found dating as early as the 2nd century, the Madonna Lactans iconography was popularized and widely disseminated between the 1300-1500s in the form of both paintings and manuscripts (Schaefer 4).

xix Ecclesia is the Ancient Greek word for an assembly or community. In Christianity it refers to the congregants of the Church, faithful to the word of God ("Ecclesia").

xx In St. Catherine of Siena's *Dialogue* on the manifestation of God's mercy she writes, "I showed you this in my open side, where you discover the secret of my heart: namely that I love you more than what I could show you with the finite torment" (Catherine).

xxi Also referred to as the Holy Communion or Lord's Supper. It remains a formal rite in Christian practice. Depending on denomination, the Eucharist is considered either a symbolic communion, or as in the Roman Catholic doctrine, the true presence of the body and blood of Christ ("Eucharist").

xxii In Eastern Orthodox and Roman Catholic theology, the assumption occurs when both the body and soul are taken into Heaven after death ("Assumption").

xxiii Collection of Ecclesiastic law and treatises on Chrisitan doctrine, worship, and discipline meant for the clergy and other Church leaders (Peterson).

xxiv God willed that the Virgin Mary, through the act of Immaculate Conception, be exempt from the law of bodily corruption in the grave. This proclamation confirmed that when God filled Mary with his grace and conceived Christ she was freed from the curse of Original Sin (Pius XII).

xxv The "ichthys"—the Greek word for "fish"—is a type of *vescis picis,* with the ends extended slightly beyond the base on one end of the lens shape. This shape became a way for Christians during the persecution to identify one another as part of the same faith. The original Greek "ΙΧΘΥΣ" translates to "Jesus Christ God's Son's Savior" ("Ichthys").

xxvi This painting is a depiction of Christ's resurrection; however, the title is taken from the church of San Francesco al Prato where the image was originally housed.

xxvii *See* note 6.

xxviii *Galatians* 3:28

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Communications/ Media Studies

Emily Johnson

"Sick of the Government Flu: How the Corruption of Social Media Undermines the Ethos of Punk Culture"

Mentored by C.L. Costello
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"The topic presented was multi-layered with evidence of in-depth research. The discussion of multi-vocality throughout the various time periods aligned with the use of preferred social media platforms, provided the audience a relevant understanding of the perspective that, 'social media undermines the ethos of punk.' Thank you for sharing your piece with us! Congratulations!"

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Sick of the Government Flu: How the Corruption of Social Media Undermines the Ethos of Punk Culture

The Sex Pistols once famously chanted in their song, "God Save the Queen:" "Don't be told what you want to want / And don't be told what you want to need." These lyrics foreshadowed the anti-authoritarianist, anti-capitalist, and do-it-yourself ethos that transpired in the 1970s. Materializing via garage music through bands like The Velvet Underground and The New York Dolls, the punk movement was rooted in equality and amateurism. Punk devotees aimed to extract themselves from capitalist entanglements and oppressive systems. While original punk recognized the necessity of creating authentic discourse to overthrow institutionalized oppression, the same could not be said for its rebirth that manifested in 2010 via social media. Punk seemingly made a comeback with the D.I.Y. ethos of Tumblr, which featured punk fashion as a cool aesthetic and cooler index of sociopolitical awareness. Yet, the medium and counterculture iconoclasm seemed at odds. The posted-and-liked display of torn fishnet tights and vulgar Dead Kennedys' lyrics that this social media offered could not provide an appropriate husting for resistance and change, that is, the true daunting and menacing spirit of punk. Even though optimists of Web 2.0 wishfully viewed social media as a hub for civil engagement and democracy, the co-opting of a resistance movement like punk culture through social media demonstrates its emptiness as a true communicative power.

The Virtual Democracy of Web 2.0

Once seen as a godsend for social connection and the growth of strong, pluralistic communities, social media has fallen short of scholars' original predictions about digital textuality's contribution to society. Overly saturated with images and texts contributing to body dysmorphia, mental health concerns, and self-harm, teenagers, especially teen girls, fall victim to the harmful effects of social media. Infamous for being a cesspool flooded with harmful messages pushing children and teenagers towards self-destructive behavior, senators are proposing bills to ban TikTok in the United States - a bipartisan agreement unfathomed by optimists of technology in the 1990s (Wong et al., 2023)

Not only are the damaging ethos of social media impressionable on teens but can affect the trajectory of adult's rational reasoning. And, because adults participate in civil matters and occupy positions of power, the harmful communication occurring in niche communities on these platforms endanger the nation. Take the January 6 insurrection: under further investigation, reports assert that the violet uprising

was preventable had social media companies held right-wing activists accountable for their rhetoric that occurred on multiple platforms. Instead of fearing reprisal from the radical group, these communicative platforms should have abided by their content moderation policies. Once seen as a podium for improving society, social media spiraled out of the hands of the people and its moderators and became a megaphone for dangerous propaganda (Zakrzewski et al., 2023)

Even before the birth of social media, the interactive technology of the web promised to enhance society by facilitating discourse to create social and political change. Exponents of computer technology and the texts it made possible were believed to be accessible to all and allow for the exchange of free thought between individuals with common interests. As mentioned by Zappen (2004), contemporary critics examined the meaning of new digital meaning compared to old print. They asserted that social media and online print were free of hierarchies and single-stream thought; these platforms allowed for interactive networks of associations filled with multiple voices for the collaboration of ideas. Supporters envisioned a new dialogue between individuals beckoning a dynamic interaction between users to promote the discovery of our "authentic selves" by testing and exchanging identities with others (Zappen, 2004, p. 151). This kind of self-exploration for the betterment of individuals and society has been muddled by the malicious messages that encapsulate social media, where narcissism, the solidarity of the mob, and crazed conspiracies have prevailed (Douthat, 2023).

Optimists' Utopian Fantasies

The development of the internet promised a realized democratic ideal of "public deliberation and participatory democracy, expanding opportunities for civic engagement, and would, by increasing the trust, transparency, and accountability of government, improve connections between citizens and public bureaucrats in policy-making processes" (Kim & Adam, 2011). While Web 1.0 reinforced reader response, which focuses on an audience's reaction and interpretation of a text, Web 2.0 promised dynamic content of reading, writing, and engaging with other users, via social media ("Reader-response theory," n.d.; Sharma, 2022). Individuals thought that with the ease of connecting with thousands of people and being able to access any information with a simple tap of a button, engaging in social and political matters would increase (Kim & Adam, 2011).

Prior to social media, the new textuality of the internet – with hyperlinks and user-modified content – offered true social engagement. Using links and jumping from different pockets of information made reading

nonlinear, unlike printed texts. In this context, neither the writer nor the reader has control of a communicative network; there is no hierarchy between users (Landow, 1994). What came to be known as "wreaders," people adding new information to threads of discussion and feeling a sense of ownership for their contributions, flourished under the creation of the digital world (Thomas, 2013). This participation evokes the Bakhtinian ethos, where he thought textuality was going to be everchanging to create dynamic dialogues between others (Zappen, 2004, p. 151).

However, combing through the weeds of "fake news" and biased information, there is a "us vs. them" mentality that seeps into the foundations of social media (Godbout, 2011). One need not look further than the fall 2022 January 6 hearings to learn how empty this promise has become. The (real) democratic indictment of social media that emerged from the hearings unequivocally demonstrated the dangers of an environment in which unconstrained discourse becomes the vehicle of fascism. This kind of mindset hinders the idea of equality among users and people in power, consequently reducing the chances of inducing real sociopolitical change. While supporters of this "cause" thought they were wreading digital texts to change the trajectory of politics, they were simply feeding into the twisted and dangerous "activism" that has infected the Internet.

<u>Performative Wokeness</u>

Social media has forever changed the way we connect with others, literally and figuratively. Platforms like Instagram, TikTok, and Twitter, provide a space for users to create new relationships based on similar interests – a luxury usually found in small cliques and school hallways but not on as great a scale as social media (Lenhart, 2016). Even though such connectivity seemingly benefits many individuals, who now follow their friends and favorite celebrities (as if they were friends), the echoing of false reality fills the void of users' feeds. Like Douthat (2023) states, social media is a "hollowed-out tree," where its outward appearance seems promising, yet is a mirage of true communication and social liberalism. With the accessibility of social media, anyone can take part in a trend or movement without necessarily understanding the original values of the idea or campaign. Ignorant and lazy activism contributes to slacktivism, where individuals might support a cause but are not necessarily devoted to it, just for the sake of being "woke" (Lodewijckx, 2020). Empty activism is what is destructive to a society – simply liking and reposting images and tweets that do not change the lives of people at the iron feet of oppression.

Criticizing the Anok

Communication is a part of our everyday lives, whether that be by using words/texts, images, and videos. Individuals who can communicate effectively and appeal to others (while rummaging through the tainted layers of social media) can create unified thought to improve society by stripping away norms and outdated beliefs. Through the development of Web 2.0, scholars believed this new communicative platform would advance rhetoric's natural goal of creating meaningful discourse; however, the underpinnings of performative activism blended with the formulas and controlling qualities of algorithms were the shortcomings of these platforms ever becoming "punk." By using rhetorical theory and post-structuralism, scholars can critically examine social media and the destructive issues that eroded its promising potential.

Minding the Bollocks

Rhetoric is the way in which we understand how our modes of delivery, gestures, facial expressions, and words influence individuals to think a certain way. The Greeks utilized the artform to create and pass laws to improve society; the act of public speaking was the most basic form of politics and democracy ("2.2: Ancient Greece," 2022). Rhetoric claims to produce discourse on all areas that concern individuals: "government activity, the administration of justice, and the setting of ethical values to be followed in private and public life" (Barilli, 1989). By analyzing these systems, we can praise or stigmatize others on their actions. Members of communities who understand rhetoric can determine if a rhetorical speech in politics is credible and if it can be accepted – here lies the democratic view of rhetoric, where people's opinions of a speech dictate the path of the ideas being presented.

Further, rhetorical theory is used as a tool to dismantle the underlying meanings in compositions and speech to understand their functions and effects on audiences (Gaines, 2017). While rhetorical theory relies on the criticism of discourse, post-structuralism critically analyzes and deconstructs the framework of social institutions ("Post-structuralism," n.d.). Punks utilized these two theories to undermine the injustices individuals faced in the 1970s. They desired deconstructive discourse between their peers to acknowledge the oppressive qualities of the government to overthrow the powerful institution.

Dismantling Preconditioned Beliefs

From a young age, we have habituated the customs of society. As Barthes (1957) wrote in "Toys," toys are a product of chemistry, not of nature. These specially crafted toys are readily made for children, who are simply the owner and user, never the creator. These toys influence their thought without them even knowing how to speak yet – a little girl's doll prepares her for motherhood, and a boy's action figure for war.

They literally prefigure the adult world, accustoming them to norms and the structured beliefs of society. By exploring the underlying meanings of toys, we can understand the innerworkings of society and how systems effect our perceptions of the world around us.

Indeed, as Barthes (1957) states, these toys are "made of a graceless material" (plastic) that serve a function. Social media is a complicated web of formulas and algorithms, where nothing is natural – everything is planned to influence our thoughts just like toys. Although the same cannot be said about punk culture, which sprouted from natural discourse – a movement to stick it to the man. And with this genuine advocacy for inducing political and social reform, there is a touch of humanity in punk culture, a trait that social media (and toys) lack. The set of preplanned rules that constitutes social media is a disservice to true communication, where users are spoon-fed their ways of thinking and beliefs.

Further, because punk culture was made up of average people, the movement was able to blossom under the idea that it was uncalculated and free. Punk separated themselves from systems of power and mainstream thought to recognize the government's iron fist. The misfits reveled in individualism and wholeheartedly took pride in disobeying rules set by institutions. And challenging the status quo is liberating and alluring. A sense of amateurism is produced when the messy seams of sophisticated institutions are torn apart for everyone to see – an action feared by professionals and individuals indoctrinated by social norms and expectations. "Strip Tease" by Barthes (1957) furthers the idea that defying the expectations of stripping is what allows the sexualization of women. When a woman identifies herself as a stereotypical sex worker (adorned in feathers and furs), the distinctive qualities of sexualization are lost; the viewer already assumes her actions before she undresses. The performance is deliberate and calculated. However, when the ritual is shed and the inexperienced dancer clumsily performs, the power of eroticism is restored. Amateur strippers breaking the fourth wall allow viewers to reconnect with the sensuality of stripping, as it goes against what is expected of them. The original punk movement provoked the same feeling, where amateurs prioritized dismantling powerful institutions by calling attention to their uncalculated ways.

Mosh Pits and Mohawks

Punk was a snarl and snash at the systems of oppression. The counterculture focused on reshaping society and norms through aggression, odiousness, and extreme behavior in their self-expression. Rooted in being highly critical of the world and fiercely separating themselves from dominant

culture, punk not only weaved itself in music and fashion but was a lifestyle that sought to undermine its outdated beliefs.

The origins of punk lie in the radical development of youth culture. After the second world war, teenagers began to form a culture of their own that did not previously exist; they differentiated themselves from adult society and recognized their own interests to connect with others their age ("Teenage culture," n.d.). While teens reveled in this new sense of belonging with their peers, adults viewed these cliques as delinquent (Sharples, 1994). They feared that with the creation of youth subcultures came the rejection of mainstream (adult) society (Buchmann, 2001). And the perfect example of this dreaded, rebellious behavior? Punk culture. Over the years, youth subcultures became more and more prominent in everyday life, with punk culture being a product of juveniles advocating for social and political reform.

Deadly Riffs

Hostile, heated, and hesitant are the debates of which band created punk. Some scholars and punk enthusiasts believe the sound emerged in the early 1970s in New York via bands like The Velvet Underground and The Ramones (Sharples, 1994). By 1975, punk made its way to London by way of the Sex Pistols (Prinz, 2014).

The foundation of punk was to counteract social norms – straying away from anything mainstream in an intense attempt to call attention to the movement and its beliefs. The music reflected the antiestablishment ethos aimed at freedom and self-expression. The sound of punk music was alien to the music industry and music lovers; it was a storm of chaos and loudness unlike the norms of rock and roll, funk, and rhythm and blues. Songs were hyper-compressed and failed to tell a story like other genres of music, instead they were used as an outlet to state their anger towards the government and people in power. These short dissonant choruses of screams were paired with aggressive guitar riffs that served as a sonic stump for vitriolic assault on the establishment.

In these hustings, the sound of punk music was chaotic and menacing. The whirlwind of drums, bass, and highly amplified guitars were three characteristics that distinguished punk from other music genres (Sharples, 1994). The basis of punk was to sound unrefined, amateur, and under-produced. This thundering clamor was a byproduct of the do-it-yourself (D.I.Y.) ethos, where art was made by anyone, not just specialized experts. Also, because of the limited use of instruments (only guitars and drums), a small

band, often comprising three people, was capable of handling the production of the punk sound (Sharples, 1994).

The most distinctive element of this new type of music was the lyrics. Songs oozed with aggressive and brutally honest remarks that were offensive to many. Lyrics were the forefront in punk songs, as they were seen as an expression of thought (Sharples, 1994). Punk songs contained vulgar language and taboo topics revolving around sociopolitical topics and the government's orchestration of citizens ("Punk rock 101," 2022). Breaking the barriers of what was socially acceptable and calling out individuals who were at fault in government and other positions of power were punk artists' main goals. In all, their lyrics were raw.

The Sex Pistol's debut, "Anarchy in the U.K.," was a foreshadow of what was to

materialize after citizens recognized the injustices that accompanied capitalism and the corrupt government: "Anarchy for the U.K., it's coming sometime and / maybe / I give a wrong time, stop a traffic line / your future dream is a shopping scheme." While some bands hinted at overthrowing the government and the political and social oppression in the 70s, the Sex Pistols were the first to explicitly state their antiauthoritarian beliefs. In fact, in the same line, they shine light on capitalism's tight grasp on society. "Your future dream is a shopping scheme" implies how capitalism ingrained the idea of personal success through hard work and profit over humanity and personal needs and desires. Big corporations and their greediness were not the only ones to blame, but individual's complicity. Punks had no patience for punters. This line brings awareness to how individuals are part of a corporate sales strategy that directly feeds into capitalism and consumerism, which increases the profits of the already wealthy. Falling for advertisements does not create happiness, it simply increases corporate profits ("Anarchy in the U.K.," n.d.).

Without doubt, punk artists did not make songs for individuals to dance to like disco, which was also a byproduct of the 1970s. Even the kinesthetic expression of dancing captured the anger of the music, which was a change from the flash and fluidity of disco's dancefloor to the menacing mosh pit. Punk bands wanted to create a relationship with their audience and form a sense of community to encourage change in society. In a way, attending punk concerts was a religious experience, where band members and the audience cathartically screamed and moshed to the lyrics. As a result of people in power inadequately addressing institutional racism and economic struggle, which included the high employment rate at the time, punk bands demonstrated an awareness that other subcultures failed to do so (Sharples, 1994).

While punk's lyrics and D.I.Y. sound were important in distinguishing the genre and indicting the establishment, punk ethos manifested when performing live. The interactions that occurred between the band and the audience defined punk. Despite the stage, a social hierarchy ceased to exist like what was featured at concerts where the song artist was glorified and worshipped. Punk musicians usually performed in a small intimate setting, with a makeshift stage that was just above the audience. The cost of tickets at these events were usually no more than what the band needed to cover the price of performing at the venue: they did not make a substantial profit like bigger, popular artists did. Band members were also known to dive into the mosh pit and spit and urinate on fans (Sharples, 1994). These kinds of behaviors solidified the belief of equality amongst individuals in the punk movement. Even if a punk band was deemed popular, and had thousands of fans, they were still one with their followers.

Tattered Clothing, Preserved Meaning

Punks rallied for individualism and free thought. And they wanted their appearance to differentiate themselves from the crowd. The idolized ideas of beauty and fashion were discarded. In their place, punks turned to eccentric displays of attention to wreak havoc on societal norms and the government flu.

Similar to the aesthetic of their music, punk fashion encapsulated deconstruction, darkness, and aggression. Punks were commonly adorned in leather jackets and boots, oversized tops and pants, band tees, vintage workwear, and fetish-wear (Prinz, 2014). They usually had multiple facial piercings and unnatural hair colors, which highly contrasted the standard beauty norms of Western culture, where virgin hair and fitted clothing were deemed acceptable in society.

In addition, the D.I.Y. aesthetic featured in their music trickled into their fashion. Punks' clothes were usually manipulated to the point where safety pins held pieces together to further show the creative and distinct look that is the culture (Prinz, 2014). Followers of the movement wanted to stray away from buying ready-to-wear clothing in department stores and shops, in fear of contributing to the mainstream and capitalism. Thrift stores were their shops of choice, where inexpensive clothing could be messily mutilated without fear of ruining a high-priced garment ("1970s punks," 2022).

While this tattered look challenged the status quo, individuals partaking in punk culture felt a sense of belonging when seeing others dressed similarly (Sharples, 1994). Punks were seen as equal in the eyes of one another, and their appearance solidified a cohesive movement. If one saw another wearing the same garments on the street, both individuals instantly knew they stood for the same cause. Through their use of

mangled and bold clothing choices, they created a conversation as to why they looked the way they did, which forced non-followers to be aware of their cause. By appearing this way to the public, punks not only gave center stage to their beliefs and to the movement, but also created discourse of why beauty standards were excessively ingrained in society – why did everyone want to look the same when America, specifically, pushes for individualism and self-expression?

<u>United Amateurism Vs. Formulaic Isolation</u>

Punks showed the messy seams of their cause through their music and appearance. Punks were amateurs, who did anything possible (queue offensive lyrics and vibrant-colored mohawks) to draw attention to their use of post-structuralism and desire to dismantle systems of oppression that were burdening citizens' lives.

Punk bands usually did not have experience in vocals and music production (Prinz, 2014). Also, punk culture was a byproduct of youth culture, where the average follower was in their mid-20s (Sharples, 1994). Simply put, punks did not methodically articulate their movement. Yes, they had objectives that benefitted the greater good, but they were incapable of forming a master plan that formulaically boosted their cause.

Meanwhile, the same sense of amateurism cannot be said for social media. Social media is built upon the foundations of codes and formulas that make up its algorithm. Posts, reposts, and marketing schemes seen on Instagram, TikTok, and Twitter are specifically catered to individuals based on their search history and interests – nothing is left to chance like the punk movement was. Filter bubbles and the curated content that comes with algorithms isolate our means of obtaining information. Individuals might be provided with one-sided stories and limited information if the media they are viewing does not fall in line with their search history ("Digital media literacy," n.d.). Built upon hashtags and marketing strategies, social media is not a "public sphere" like optimists originally thought; information is not made visible to users if it's unrelated to their interests. Social media lacks the necessary platform for honest and genuine communication between individuals like original punk did.

The Hopefulness of Digital Creative Outlets

To optimists of technology, social media seemed promising. The interactive digital world appeared to be a utopia, filled with civil engagement, participatory democracy, and free flowing thought. Social media platforms like Facebook and Instagram were slowly used by younger individuals as a form of

communication and to build niche communities with others. While these apps sounded like punk culture, where users could bond with likeminded people, they were not. Many netizens thought Facebook and Instagram were too clean-cut (yet loaded with advertisements) and were more so used for connecting with friends and family (Tan, 2017). In their place, Tumblr succeeded, as the social networking site allowed users to create their own pages and find strangers with similar interests.

Punk 2.0 on Tumblr

Through the creation of Tumblr, individuals had more creative freedom in personalizing their digital space. In contrast to Facebook and Instagram, where posting was specifically used for updating close family and friends, users on Tumblr could design their own blogs with images, videos, text, and hyperlinks directing traffic to their distinct aesthetic. "The platform became a petri-dish for Internet quirkiness." (Chayka, 2022). Tumblr made it easy to create subcultures, where individuals felt a sense of belonging with one another; judgement was nonexistent inside these tight-knit communities like the original ethos of punk. As a result of this specialized user experience, subcultures began to blossom with punk being one of them (or so we thought).

The new "punk" aesthetic took over Tumblr primarily from 2012 to 2015. Filled with images of washed-up punk enthusiasts and lyrics from the Sex Pistols, the true meaning of punk was nonexistent. While posts encapsulated the menacing appearance and chaotic vulgarness that was once punk, users ignorantly disregarded the true meaning of its roots. They were not expected to attend school with vibrant-colored mohawks or mutilated clothing, they simply created an online persona that embodied the punk aesthetic (Petridis, 2014). Reposting these images and lyrics were not used for the betterment of society and promoting social change, the content simply made their pages aesthetically pleasing (Safronova, 2014).

As previously mentioned, slacktivism plays a vital role in the manifestation of political discourse on social media. And Tumblr fell victim to false displays of activism. Users reblogged punk-themed posts, bought punk-themed garments at fast fashion stores, and listened to punk-themed music. Did these trendoids necessarily know the profound symbolism of these items? Most likely not. Did they think they were challenging conventional Western beauty standards and appearing "different" to their peers who were using Instagram and Facebook as their primary media? Yes. True punk died when its aesthetic went mainstream and social media failed to provide a platform for genuine communication to induce positive social and political change that the misfits dedicated their lives to.

The Unsustainability of Political Discourse and Reform on Social Media

The freedom of hyper-textuality and the nonhierarchical multivocality of social media putatively offered a new world. And punk's manifestation on Tumblr seemed to realize this freedom in some way. Yet the fashion did not convey punk's passion – in no small part because of the medium, where algorithms and hateful speech objectify. Individuals may use Instagram and TikTok to find their personal identity; however, the Bakhtinian ethos of discovering our "authentic selves" by exchanging ideas with others is scrambled with the dangerous content inhabiting social networking sites.

The toxic communication corrupting social media from deconstructing systems of oppression to better society is more than an arm's (or raging fist's) reach away. While the internet provides us the accessibility to find anything we need in a single tap of a button, individuals are hindered by easily stumbling upon "fake news," undermining the idea of democracy. We cannot induce political and social reform if we are unable to source authentic information jumbled with misleading facts. Of course, when harmful language is not maintained by social media moderators, this is where the true danger lies to our democracy – the rise of fascism. As seen in the January 6 insurrection, a "us vs. them" mentality grew from the seedlings planted in breeding grounds facilitated by social media platforms. A malicious (yet, preventable with moderation) authoritarian ideology that supporters of technology failed to consider, blinded by fantasizing about the interaction and collaboration between users with similar thoughts.

In fact, the basis of the punk movement was rooted in equality. The existence of a hierarchal structure was obsolete, as punks unanimously wanted to eliminate the oppressive conditions of the 1970s. Punk bands reinstated this belief by moshing with fans and banishing unrealistic ticket prices for their live performances; however, social media fails to replicate the same ethos. Algorithms and formulas are embedded in the digital universe's programming. Companies profit off the amount of views and engagements they get on a post, with users feeding into their bottom line. Social media is rooted in calculated assaults of marketing schemes and advertisements to increase capitalism and consumerism – two systems original punks fiercely rejected.

Further, social media does not provide a space for free thought. We as users are spoon-fed and conditioned to believe the thoughts, beliefs, and desires of capitalism. Social media changes our perspectives of the world and what we focus on – teenage girls falling victim to idealized beauty standards, and democracy to fascism. Filter bubbles and the isolation that come with the algorithm hinder the flowing of

free thought and finding our "authentic selves" in the digital world. Punk's amateurism and rawness that exposed the twisted seams of the government enthused rebellious youth; the calculated and clean-cut-ness of social media is not capable of provoking the same emotion to create social movement devotees.

Without the forum to create meaningful discourse and social movements (that do not simultaneously feed into capitalism), social media fails as a political stump for change. While punks marched to music venues in their leather boots, anticipating moshing with other misfits as a form of resistance, "activists" on social media illegitimatize movements by simply liking or reposting them on their feeds without second thought. Slacktivism undermines democracy, where the assembly of individuals is necessary to produce policy change. Failing to use their own voices (or as true punks, their screams) and reducing activism to idle reposts, the people's cries will never resonate, rather, they will simply be lost in the abyss that is social media algorithms.

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Computer Science

Molly Smith
"The Role of Big Data in the Development of Autonomous Vehicles"

Mentored by Mary Engel
Lehigh Carbon Community College

"Molly's conference paper and presentation were outstanding. She gave a great introduction to the history of autonomous vehicles, big data and deep learning algorithms while not shying away from the ethical and moral issues of the field. It was a pleasure to read the research paper and attend the presentation."

Dr. Ensala Mema
Assistant Professor of Mathematics
Kean University

The Role of Big Data in the Development of Autonomous Vehicles The rise of autonomous vehicles in society is something that has grown exponentially over the past decade. The use of big data in programming these cars has only caused it to rise further. Having new deep learning algorithms mimic the decision making process of the human brain, which allows cars to store huge amounts of data and make quick real-time decisions. With different levels of autonomous vehicles come different ways to use big data. In some, programming can be achieved by simple machine learning, but others take more complicated systems. There are also various ways big data can be used through different programs to make the most informed decision. The advancements of technology also cause safety concerns to be brought up, along with ethical and moral questions. This technology is the future of vehicles, and soon this will be a standard process in most countries. The countless benefits it comes with will benefit both people and the environment. Autonomous cars show a recent advancement in technology. Companies like Tesla and Google have poured millions of dollars into developing autonomous vehicles, and it has been successful. They have taken off in popularity, and trends show they will become standard in the near future. Elon Musk stated recently "We continue to make software improvements. So I think there are some very exciting software updates. They're going to come out in the next few months that will improve the experience for the whole fleet of customers out there. . . . I think customers can certainly look forward to some really awesome functionality improvement in their existing car" (McSharry 82). Technology continues to develop, advancing the ideas of the past quickly. There are several different types of self-driving cars, so the sensors and technology collecting data depend on the purpose. It is also programmed in different ways, depending on its usage. It is widely agreed that self-driving cars will become standard at some point in the near future.

Big data is an ever growing topic, with uses in nearly every field. This is especially true when it comes to technology. Using big data to help with advances in these fields comes with great benefits, but like anything else it also has some drawbacks. Firstly, big data needs to be given a general definition. Big data is defined by Oxford Dictionary as "Extremely large data sets that may be analyzed computationally to reveal patterns, trends, and associations, especially relating to human behavior and interactions" (Deep-Learning). Which means that programmers are taking data from consumers, running it through algorithms, and using it to improve their technology. This method of programming is used in many fields of technology, and especially self-driving cars with their rising popularity. One reason big data is used in programming is because of the amount of information these cars generate. Every time the car drives it is collecting data. This is far too much information for a human to be able to compute, which is where big data comes in. One source states that "The smart car of the near future is essentially part of a gigantic data-collection engine" (Big Data Applications). The use of big data is an extremely important part in self-driving cars because of this. One main reason is because when a car has any sort of self-driving technology in it, it needs to make real time decisions. This needs a large amount of data, and also for it to be processed very quickly for the smartest possible decision. This is true for countless cars today, as most new cars are being built with lane guidance, cruise control, and GPS systems. All of these programs need data to make real-time decisions, something that was not possible before big data was around. They also require quite a lot of data even for smaller decisions, and all of that data is stored on the cloud. They can generate GigaBytes of Data per second, all of which maintains high CPU and for real-time results (Big Data Applications). However, using Big Data systems to process all of this information allows for an affordable and effective

solution to use large amounts of data (Deep Learning for Object Detection). Using big data in autonomous vehicles also allows them to develop in many new ways. Something unique about self-driving cars is the fact that they are forced to make quick decisions every second. If something goes wrong it could be life threatening to the passengers or even pedestrians nearby. However, making decisions about images a machine has never been programmed to learn is difficult. This is where big data comes into play, as there are many methods to use data that can mimic a human brain. This takes the decision making aspect to an entirely new level, as cars used to be programmed just based on pattern recognition. While the idea of autonomous vehicles is nothing new, this fact is. One source traced the first idea of an autonomous vehicle back over eighty years, to 1939. Over the last decade this idea has expanded greatly. Part of this is due to the usage of big data, and modern knowledge of wireless networks and sensors (Deep Learning for Object Detection). It is predicted that self-driving cars are the future of vehicles, but again this is not a new idea. Many people already rely on fully autonomous trains, as they are standard in places such as Japan and London. The basic ideas of technology remain the same as they do in cars, for example GPS programming and sensors. These systems do differ slightly though, as trains are on a network entirely on their own. This reduces the amount of real-time decisions the machine has to make. There are no outside vehicles to encounter, and very few unknown objects. Due to this, these trains are widely known to be safe (Deep Learning for Object Detection). Another place this technology has been around is in advanced driver assist programming, also known as ADAS (Big Data Applications). This proves the technology exists and will only continue to grow, however there are some key issues that need to be faced for these vehicles to be fully autonomous and safe. These cars need to be programmed to learn, not only recognize patterns. This

has changed self-driving cars and will only continue to do so. Before data collection can be discussed, the different levels of automation need to be defined. There are four different levels of self-driving cars. A car with no automation whatsoever would be Level Zero. This means that there is a human in control of the car one hundred percent of the time, with no help from a machine. Level One vehicles are called "Function-specific Automation." Vehicles with this can often perform around one to two tasks, all pertaining to one task. An example of this would be brake assist. The second level is called Combined Function Automation. This is a level up from the function specific automation because it performs at least two functions at one time. Cars with this function might be enabled with cruise control or lane centering. Level three vehicles have limited self-driving capabilities. This car is basically self driving, however it still relies on a capable licensed driver in the front seat at all times. This car would rely on the driver in situations it doesn't recognize. For example, in cases of bad weather or heavy traffic. The final type of self-driving car is a level four car, which is enabled with full self-driving automation. This car is completely autonomous, and should not need any extra help. The only thing a driver would have to program is the destination (Big Data Applications). These levels of cars all present different challenges. The first three types of cars are all fairly easy to program. They rely mostly on machine learning, which can be programmed with only pattern recognition. It's only when a driver is completely removed from the situation that it becomes a bigger issue. To start, cars like this are more difficult to program. An engineer cannot rely solely on pattern recognition, as cars will encounter more than could ever be programmed (End to End Learning). This brings in the concept of deep learning. Deep learning uses neural networks to stimulate a human brain and decision making process. The second issue with completely autonomous vehicles is

that several moral and legal issues are brought up along with it. Without a driver to rely on, cars are suddenly responsible for sometimes life threatening decisions. For example, it brings up the question of who would be responsible if that car was in an accident. Would it be the owner of the car, although the owner was not driving? The knowledge of this is still limited, due to the newness and complexity of this issue (Deep Learning for Object Detection). As of right now, drivers are still required to be licensed and in the driver's seat even in fully autonomous vehicles. However, drivers become lazy and easily distracted. One study found that drivers were even encouraged to play board games and watch movies while the car drove (End to End Learning). The invention of fully autonomous vehicles may bring a new kind of drivers education as well, depending on what drivers are going to need to be trained for in the future. Cars that are completely autonomous need a large amount of data in order to function properly. The main purpose of self-driving cars is to collect data, analyze it, and quickly make a decision based on the information they have. The data collection part of this is difficult, because it has to be collected constantly and in real time. This takes up a lot of space on the cloud, and can become very expensive (Big Data Applications). Finding cost effective solutions for this issue is something that has been experimented with in the past couple of years. The main way of collecting data currently is with sensor technology. Vision sensors are the most standard, mostly used for measuring objects and their distance from the car. Ultrasonic sensors are used to emit ultrasonic waves that detect nearby objects. LiDAR sensors are newer technology that uses laser pulses and light reflections to gain an understanding of its surroundings. This stands for "light detection and ranging." These sensors take in all of the data that is needed for autonomous driving, and they store that information in a cost efficient way (Big Data Applications). In addition to

having sensors, the car also has to be programmed in a myriad of conditions. It needs to be driven in different weather conditions, and in cases of light and heavy traffic. It also requires being driven on different road types, such as bumpy and unmarked roads. Cars need to be programmed with a human driver, that is the only way they can learn. They have to make mistakes and then correct those mistakes. Taking all of this into account, one study programmed a car usings convolutional neural networks (CNN). Convolutional neural networks mimic a human brain with the ability to recognize new images. The same study explained how this car was programmed. The car has only three sensors on it, and it is calibrated with the lane sensor called the "ground truth." When a human drives the car, it determines any differences between the ground truth and actual driving. When the car has been programmed, it sends the frames of the video to the CNN which returns a steering command. That command updates the position and orientation of the vehicle, which sends a new steering command and so force. This is the basic method that data is collected, although it is still very effective. This study programmed a car for only seventy-two hours and found it could drive on its own with little to no issues. This leads to the different uses of big data. As previously mentioned, completely autonomous vehicles need different ways of programming to account for images they might not have seen before. One way this is taken into account is with CNNs. The basic structure of this includes an input level, one or several convolution levels, a connection level, and finally an output level (Applications for Self-Driving Cars). As seen in the previous example, these can be trained to recognize map pixels and can drive even in advanced situations such as unmarked roads or highways. Even things never explicitly trained to determine can be detected because of the way these mimic a human brain (End to End Learning). This is a type of deep learning used in autonomous vehicles. Deep learning is a way to

extract new levels of information with only limited information given. Machine learning was used previously (and is still used in some cases) but it has its limitations due to being mostly pattern recognition. Another tool that is used is an auto encoder, which is made up of two kinds of networks. The encoder is used to understand the surrounding and make a decision based on that, while the decoder "restores the original data" (Applications for Self-Driving Cars). Within this, Convolutional Auto-Encoders are used to create higher quality images that allow for faster processing and decision making times. Another subset of deep learning is the reinforcement learning method. This uses rewards and punishments to train cars to modify their actions. Cars are monitored to see how close they are getting to their goal and given rewards for that, while given punishments for faults and problems. Ethical issues are also an important issue at the moment. A new type of algorithm called ethical algorithms have been invented to try and combat this. These algorithms are built to ensure the safety of the passengers in the car and everyone around it (Big Data Applications). "The accuracy of autonomous navigation depends significantly on attaining precise localization, unobtrusive data collection, fused data-set generation, and uninterrupted high-level communication with other vehicles and surrounding smart infrastructure" All of these methods combined make for the safest possible car (Deep Learning for Object Detection). Although great advances are being made when it comes to safety, there are also still many concerns. Since all of this takes place online and is stored on a cloud, there is potential for hacking. Also this all heavily relies on the internet, and kind of power outage or lack of internet connection could be possibly fatal (Big Data Applications). If a car was hacked it's location could be stolen as well. This might lead to criminal situations if someone was being stalked (Deep Learning for Object Detection). Cars also need to be programmed with every single situation in mind,

there is only so much that can be achieved with deep learning methods. This includes taking slippery surfaces into account and slowing near school zones. As of now, companies are working against one another in a race to make the first fully autonomous and accessible vehicle. This results in a lack of standardization across the board. There need to be laws enacted that set a standard for lane and pedestrian detection as well as sign recognition (Big Data Applications). This problem of a lack of standardization also bleeds into other areas, including drivers. As of now, most DMVs require a capable driver in the driver's seat at all times. While this is the case now, it may not always be. Even though there is a capable driver in the car, studies have shown that they tend to be very easily distracted (Big Data Applications). When people become too reliant on technology they become distracted with other things. One study determined that drivers were falling asleep behind the wheel often, and were even encouraged to do other things like play board games to keep them awake. While this might solve the problem of drivers falling asleep, it takes their attention off the road. Another thing to consider is that there may be a time when a licensed driver isn't required in the car at all. This raises even more new safety concerns. If an accident were to occur, there would be no one to take responsibility for it as there was no one driving. Speaking of accidents occuring, they are much higher than non autonomous vehicles. "For every million miles driven, self-driving vehicles had 9.1 crashes, compared to just 1.9 for regular vehicles" (Big Data Applications). While there is a race to develop this technology as fast as possible, engineers need to remember that there are human lives in the cars. Safety should be a priority for every company. These questions are very important, and will only continue to further the technological advances these cars make. These cars are the future of technology, and can help with many issues society faces today. A greater number of people will have

access to cars, leading to more education and job opportunities. This can also help climate change, as most of these vehicles are electric. The standardization of autonomous vehicles is closer than it might seem. One source states "Self-Driving cars will become mainstream in limited capacity by 2025 in a constrained environment and designated driving areas" (Big Data Applications). Not only will self-driving cars become the future, but this technology will be used in countless areas of technology. Having a program that mimics a human brain and stores incredibly large amounts of data will cause great scientific advancements (Applications for Self-Driving Cars). Not only will this technology be seen in cars, but it will spread to other vehicles as well. It is already seen in trains, but it will soon be implemented in tractor trailers, buses, and large trucks (Deep Learning for Object Detection). The technology big data has allowed usage of is revolutionary. One reason engineers in the past have had trouble programming is because of the amount of data required to make these cars safe and yet still affordable. Using big data in new programming methods solves those issues. Deep learning methods have completely revolutionized the self-driving car, and some programs have already become standard in newer cars, such as cruise control and lane shifting. Data is collected from many cars all of the time, and used to program cars with greater accuracy and safety. While it is agreed that this is the future, it will still take work to get there. The ethical and moral issues remain, but there are newer ethical algorithms designed to solve them (Big Data Applications). Future studies will focus on how to improve the quality and safety of these vehicles. This technology is moving forward rapidly, and the use of big data will only continue to help make these vehicles more standardized. Works Cited Abhishek Gupta et. al. "Deep learning for object detection and scene-perception in self-driving cars: Survey, challenges, and open issues."

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Interdisciplinary Studies

David Wilsea
"Parasite and the Use of Universal Struggles
to Transcend Cultural Barriers"

Mentored by Ellen Kreger
SUNY Westchester Community College

"David's paper and presentation were both outstanding. The slides presented flowed smoothly as he presented the paper showing his level of preparation. His thoughts in the paper were thorough and presented in an organized manner that was a pleasure to read. He found appropriate research to support his thoughts and his ability to expand on his thoughts and findings when asked questions showed his knowledge and passion for the subject. Well done!"

Dr. Diane Dispagna
Director of Teacher Education
Dominican University

Parasite and the Use of Universal Struggles to Transcend Cultural Barriers

The extensive and ever-expanding filmography of legendary director Bong Joon-Ho has reached levels of both quantity and quality that few others could ever dream of. Movies like *Snowpiercer, Okja, and Memories of Murder* have all attained critical and commercial success from their distinct style, tight direction, and constantly unfolding plots. This narrative and stylistic framework has been quite resonant with both South Korean and American audiences over the years. This presents an interesting situation as, generally speaking, the American public has always been quite reluctant to accept foreign films and directors. It is clear that Joon-Ho's expertise in filmmaking is such that the American mainstream could ignore him no longer, and no movie of his better embodies this than 2019's paradigm-shifting *Parasite.* The film's relatable and universal themes came together for an experience that could be enjoyed by virtually anyone, regardless if they can relate to the strong South Korean cultural critique being presented. It is worth considering that the key to such universal success that transcends cultural barriers may well lie within the specific messaging being presented; and in the case of *Parasite,* being its commentary on class hierarchy. This paper will first analyze the South Korean cultural critique being presented, followed by a Marxist reading of the text, and an examination of how these universal themes are presented and what they say to a worldwide audience.

If nothing else, *Parasite* is unabashedly confident and bold in its satire. Using elements of drama, comedy, and suspense, it propels along a story of a family that is

willing to do anything and everything to ensure their ever-fleeting financial security. The picture that the film paints is anything but a flattering one, with the destitute Kim family being portrayed as sneaky, conniving and manipulative, and the excessively wealthy Park family characterized as dense, unintelligent, and blissfully unaware of their surroundings. Despite this, the poor nature of the Kim family's situation did not generate a similar level of intelligence to that of the Park family. Writing for The Cinej Cinema Journal, Alireza Farahbakhsh and Ramtin Ebrahimileech explain that "they leech off a neighbor's Wi-Fi, hold temporary jobs such as folding pizza boxes, and live with bare minimums, but they are all intelligent and talented, specifically the children" (10). This disparity in both intelligence and wealth calls into question how such a scenario could arise in the first place, a question which then leads into the film's primary target of critique.

Through virtually every possible avenue, both verbal and non-verbal, the film communicates an extremely apparent disdain for South Korean capitalism and the culture around it. Generating an excessive amount of wealth creates an upper class who are happy to exploit those below them to maintain their status, and a lower class who will put themselves in harm's way just for a taste of that same experience. These foils are visually communicated by the mise-en-scene and the set design consistently throughout the entire film. It opens on a shot of one the Kim family's only sets of windows, the bright light of the outside hardly reaching the dusty and dingy basement where they reside (1:11). Later on when Ki-Woo is first heading to the mansion, he literally climbs up a steep hill to a status he himself could never attain on his own (12:18). This long shot emphasizes just how small and out of his depth he is, and the

high-key lighting of the following scene casts him in the similarly bright light that flushes the rest of the lush environment. The flat yard and symmetrical sprinklers also reflect the clean and problem-free lifestyle that the family comfortably finds themselves in (13:20). While these sets were built with the express purpose to draw juxtaposition, they are not as separated from reality as one might initially assume.

The Kim family's basement residence is one of the most important markers of their unfortunate situation, and also one of the most realistic. The half-basement is a very common staple in urban South-Korean areas, and is just as dangerous as it is cheap. Minjung Noh comments on their living space in his Cross-Currents essay, stating that "Living in a half-basement apartment, a symbol of poverty in urban South Korea, the family is plunged in inescapable penury in which they cannot even pay for their Wi-Fi bills—an ultimate nightmare for any individuals living in a contemporary capitalistic society" (4). Half-basements have been a problem for many years as their shoddily built, underground architecture leaves them very prone to flooding and other environmental disasters. We see this when the storm hits in the latter half of the film and the Kim family faces their final point of no return.

As the family sneaks out and runs away from the mansion to avoid being caught, they face both their basement and the reality of what's happening (1:32:05). The low-key lighting, ambient sounds of the rain, and close-up shots heavily foil the visuals of the hill seen earlier during Ki-Woo's first visit. The following scenes then follow a pattern of transitions from long-shots and close-up shots, with the tie between them all being a consistent downward journey. Clean cuts separate each of these shots so as to not distract from the rising tension, and the soundtrack employs an almost

extraterrestrial sound, possibly to compliment the bizarre and unreal nature of the situation. Once they get inside, parallel editing is used to cut back and forth from the half-basement to the basement of the mansion, both harboring people at their lowest possible points (1:35:28). Both groups have been using and manipulating the Park family to try and make the best of their situations, but they both have to face the fact that their actions have quickly caught up to them. The thematic symmetry between them is complemented by the visual symmetry, and wordlessly conveys just how desperately similar they are, with these similar situations also having the same root cause.

In a capitalist system like the one ruling over South Korea, destitution in such a place will inevitably breed people who go beyond their acceptable morals to continue living on. This is the problem at the root of *Parasite,* and is ultimately the bulk of what it has to say about poverty and life in South Korea. The entirety of the Kim family takes it upon themselves to leech as much money as they physically can from the Parks. It of course starts in the pursuit of enough money to live, but their avarice quickly catches up to them and almost gets them caught in the midst of the storm. They relish in their newfound lifestyle and take it for granted, caring little for those they ended up sacrificing along the way. They don't care of course until they are forced to with the return of Moon-gwang and the introduction of her husband, who takes acceptable one step further during the murderous climax of the film. This descent into questionable morals is something that Bong Joon-Ho himself has labeled an integral part of many of his films, and this is no exception. During an interview with Angelique Acune, he remarks that his "films have featured monstrous characters, horrifying experiences within monstrous societies, moments out of control, and the horror that comes out of not knowing when a

character has turned monstrous" (120). All of these elements end up informing one another, but in the horrible case of *Parasite*, the corrosive connective tissue wrapping itself around everyone, and everything according to Karl Marx, would be capitalism itself.

In collaboration with Friedrich Engels, Karl Marx would go on to write one of the most politically revolutionary and relevant bodies of text ever committed to paper in their publishing of the *Communist Manifesto.* His writing both in this text and countless others birthed an entirely new perspective through which post-industrial capitalistic society was viewed; writing which Bong Joon-Ho liberally pulls from in his own work. The Park and Kim families both heavily and satirically represent the concepts of the bourgeoisie and the proletariat respectively, the two divisions of class that Marx argued were in constant conflict with one another. In the 1888 edition of the text these terms are defined by Engels, saying that "by bourgeoisie is meant the class of modern capitalists, owners of the means of social production and employers of wage labour. By proletariat, the class of modern wage-labourers who, having no means of production of their own, are reduced to selling their labour power in order to live" (49). The Park family are the archetypal bourgeois capitalists in virtually every way. Everything from their obscene wealth, extravagant home, and employment of many laborers checks the boxes for this definition. The Kim family also fall similarly in line with the definition of proletariat, being those with extremely limited financial mobility and social power, and having to sell their labor to people of a higher class than them to make ends meet. The parallels with Marxist theory go far beyond mere definitions, however, and extend to the very core of the film's messaging.

Of Marx's countless theories and ideas, one of his more contested points concerns that of the tension between base and superstructure. Base is commonly defined as being made up of the resources of production, or the materials and labor required to produce goods, and the relations of production, which are the hierarchical dynamics between the higher and lower classes. The argument is that the resources available and goods they provide are always in a constant state of flux, and as technology changes, the dynamics of work and power evolve to meet the needs of the time. As this evolution occurs, the legal, political, and ideological frameworks of the time also adapt to meet the needs of the dominant class, and all of these institutions comprise the superstructure side of this dichotomy. Viewing *Parasite* through a more abstract and metaphorical lens can reveal these concepts being subtly interwoven throughout the narrative.

The base, being the more detailed and fleshed out concept of the two, can similarly be seen in more detail throughout the film. The primary resources of production being examined here are the Kim's themselves. The entire conflict of the film revolves around their financial hardships, lack of income, and willingness to do anything in order to live another day. They are the gear's that turn the metaphorical industrial machine; a machine being operated by those above them. The Kim's have been shunned by their society due to their situation, and as Bernard Beck explains for Multicultural Perspectives, *Parasite* does "concern a different kind of response to the humiliation and marginalization of social pariahs" (81). The Kim's response to their dire situation is to try and exploit those above them and siphon away as much of their resources as possible. This, in turn, represents the relations of production, as the Kim's and their labor shape

the relationships they form with the people controlling capital. This relationship even evolves as time goes on, from the exploitative manipulation of the Kim's to the violent "revolution" that overthrows those at the top at the film's climax. This model is never static, however, and the course of these actions will continue to inform the institutions that comprise the superstructure.

The superstructure being a loose collection of a society's ideological and political inclinations can often make it hard to conceptualize, but even in this more abstract concept lies much of *Parasite's* DNA. The Kim and Park families political and social standing can be seen in the aforementioned physical representations of their status in society. This disparity in housing represents more than just class, but their position in society as a whole. This structure is very intentional, as much of *Parasite's* commentary criticizes the fashioning of capitalism in a way that keeps lower class mobility low, while the slim upper class can continue to climb upwards. The ideological framework is also slated to change, but the film's notably familiar ending creates a similarly strong statement. As Paul Sweezy et al. explains, Marx believed that "the inherent and ineradicable contradictions of capitalism would generate a growing and ultimately successful revolutionary struggle to overturn the system" (26). This idea is turned on its head by the end of the film when it's clear that the power of the base was not potent enough to shift that of the superstructure. Even after a bloody toppling of the Park family, they move away and another wealthy family eventually takes their position in the house. Even Ki-Woo's idyllic dreams of becoming rich and buying the house takes place in the cold and dim half-basement he's always lived in, insinuating these dreams will never become anything more. The film generates this familiarity not just through the

full-circle ending, but through the nature of Ki-Woo's dreams themselves. His dreams of riches and success are felt nearly universally by everyone, and an understanding of this is essential to understanding *Parsite's* incredible transcendence of cultural barriers worldwide.

Even taking into account the success Bong Joon-Ho received from his other notable films, the success of *Parasite* was still unlike anything else. Widely recognized as one of the best films of 2019, it collected numerous awards from the Cannes Film Festival, Academy Awards, BAFTA, the Golden Globes, and countless other high and low profile outlets alike. Its commercial success was also unprecedented as *Parasite's* revenue dwarfed the numbers of every other one of his films, and made history as the highest grossing South Korean film of all time. Over one-fifth of the 263 million dollars the film accrued even came from American audiences, a demographic generally resistant to both foreign films and staunch anti-capitalist messaging. Many of the most popular films of the time hardly go near such a contentious topic, and those that do often have that aspect of their film completely overlooked or ignored. This was one of the many ways that *Parasite* shifted the paradigm, by forcing audiences to confront its anti-capitalist messaging and being widely successful in doing so. The only natural conclusion to such a strong record-breaker is that anti-capitalism is a far more popular message than many are led to believe, even if some don't necessarily ascribe to a Marxist or anti-capitalist label themselves. The question of how *Parasite* can manage to disseminate its message to people of so many different ideological and political inclinations then becomes integral to an understanding of its success.

It might be easy for one to label *Parasite* as anti-capitalist and little more, but this would be a major discredit to the extremely methodical and careful approach the film took to presenting this message. As previously stated, it would be virtually impossible for *Parasite* to achieve the success it did without resonating with audiences of many different ideological backgrounds, including those who would staunchly reject anti-capitalist sentiments. In order to do this, it seems that Bong Joon-Ho presented approachable messages and content in order to infuse it later on with his commentary. Much of this came in the form of the uniquely Korean setting and cultural influence, something missing from his last few films. Sohn Hee-jeong commented on this in Azalea Journal, saying "the film tactfully criticized capitalism as a universal structure while adding flavor of Korean specificities through various details" (290). This universal structure was also coated in other forms, namely Joon-Ho's trademark style of black comedy. Not only does it serve to make sudden tone shifts even more potent, but it also helps the more radical messages go down easier when they are presented through comedic scenarios and morally ambiguous characters. No other characters were as morally gray as the Kim's, and this too highlights another instance of Joon-Ho's creative approach to messaging.

One of the most critical pieces to consider in how to message a film is how the message is presented through the characters. In most instances, there will be characters who positively represent the message, characters who oppose it, and others who raise different ideas or challenges. In the case of *Parasite,* The Kim's are the main vehicle for anti-capitalism, being poor and carrying on the dreams of many by exploiting the upper class. The Park's oppose this by being the stuffy upper-class family who

benefit from everything that the Kim's suffer from. What makes *Parasite* interesting is how the Kim's uniquely throw away much of the sympathy generated for their cause. It is easy to feel for their cause at first, noting their lack of money, work, and terrible living situation. As the movie progresses, however, their often questionable and even violent actions cause virtually all empathy to be lost by the end of the film. This creates a dynamic situation, as the themes are brought about by seemingly poor representatives, but this in turn only generates more attention towards the issue. It creates a win-win scenario in which those who already agree with the anti-capitalist sentiments will acknowledge them and appreciate it, while those who don't can both empathize with the initial scenarios bringing it about, while also acknowledging its flaw's vicariously through the character's own questionable actions. This is arguably the core of *Parsite's* success, and what accrued it such universal acclaim. This dichotomy stretched past the confines of South Korea and bursted its way onto the scenes of box office's around the world, giving Bong Joon-ho a generational voice that presented anti-capitalist sentiments to a world that would've never heard them otherwise.

In both narrative and formal accomplishments, *Parasite* has already established itself as a classic only a few years removed from its initial outing at the box office. It presented complex messaging of controversial themes with a level of precision and care that allowed it to cross never-before seen barriers. Proudly and confidently presented by a Korean director, the film used a similarly Korean setting, cultural critique, actors, and even language, yet still managed to reach the hearts and minds of people across the world. As Joon-ho now famously stated in his Golden Globe acceptance speech, "once you overcome the one-inch tall barrier of subtitles, you will be introduced to so many

more amazing films," a sentiment he whole-heartedly expressed in his work. From this statement it is clear that Joon-ho wanted to reach a global audience with this film, and utilized all of these formal techniques and narrative workings with this goal in mind. His success is more than just a directorial success story, but a prime example of what audiences may expect to hear much more of in the future. In an age where fewer and fewer companies consolidate control over mass media and continue to stifle creative freedom, one should expect to hear the hungry and loud voices of more ambitious directors to come; all with something important to say and a desire to reach as many ears as possible. Bong Joon-Ho is just one of many of these directors, and *Parasite* is the culmination of years of directorial experience and a growing movement that looks back at the anti-capitalist and communist sentiments of the past, and sees them as imperative for humanity's collective future.

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Literature I

Summer Mai Li Suliman
"Not So Distant Past: The Evolution of Nubian Mythology in the Context of Sudanese Colonialism"

Mentored by Esther Schwartz-McKinzie
Montgomery College

"I was impressed with Summer's ability as writer to coalesce a variety of voices in a singular paper in work that brought together narrative, analytical, and historical writing. Her approach to understanding and presenting the intersection of folklore, colonialism, and identity was equally as compelling, doing the difficult work of exploring layers of colonialism that construct the 'other' as being natural and normal, a subjugated self that knows no other position."

Dr. Robert J. Mundy
Associate Professor of English
Department Chair
Pace University

Not So Distant Pasts: The Evolution of Nubian Mythology in the Context of Sudanese Colonialism

When I was young, I remember spending time before bed with my Jidu (grandfather), Sayed Suliman. Perched eagerly on his lap, I felt the gentle motion of my Jidu's rocking and marveled at the cabalistic sounds escaping from his lips. My understanding of Arabic has always been imperfect, but perhaps because my mind ran rampant with the vibrations of a child's imagination, I could see the fables Jidu spoke of. Through his stories, I could visualize blankets of sand draping across the Earth's rigid crust, smell the sweet scent of a breeze lifting off the fronds of a date palm, and feel the stale crunch of a sugared *baskuit* against my tongue. Through the openings of an ear, Jidu's voice flooded glistening treasures into the trove of my heart. For me, these memories and myths bestowed a personal experience of Nubian-Sudani heritage from a youthful age.

Folklore is significant in that it bridges the gaps between young and old generations. Indigenous mythologies serve as a vehicle for cultural unification; they link various diverse social groups scattered across Sudan by the afflictions of colonialism. The nuances of Nubian myth are emblematic of a rich and enduring culture shadowed by harmful colonial presences. Nubian-Sudanese culture is infused with an artistic heritage, boasting the unique stories of skeletons talking in the desert, wedded mice and beetles, or partnerships between a lion, hyena, and fox. For younger Sudanese generations of Nubian origin, unfamiliarity with these stories derives from century-long colonial attempts to disconnect Sudanese diaspora from their ancestry, and thus, their power. In short, evolving anecdotes of Nubian folklore can be read now as a means of survival in the face of Anglo-Egyptian destruction. The evolution of Nubian mythology throughout colonialism

offers glimpses into how ancestrally indigenous tales mold the nature of modern-day Sudanese culture and identity.

Exploring the role of Nubian myth in Sudanese identity and upbringing begins with understanding the circumstances with which it was forced to adapt. Sudan's colonial history played a significant role in pushing indigenous folklore to evolve. This story of conflicting impulses—resistance, assimilation, and self-preservation—reveals the how and why of Nubian-Sudanese mythology. According to the British Museum, in their catalog "Sudan, Egypt, and Nubia," Nubia geographically spans across the Nile River from Southern Egypt to Northern Sudan. As one of the oldest known civilizations, speculated to have arisen during at least 300,000 BCE, Nubia has endured various periods of domination. Most notably, the land of Nubia experienced a particularly bloody progression between Anglo-Egyptian colonial trade and Mahdist movement authority.

This research explores the dominion of three major abusive powers Sudan is survivor to: Great Britain, Egypt, and the Ottoman Empire. Laura Etheredge, editor of, "Battle of Omdurman," states Sudanese livelihood underwent various forms of Egyptian dictatorship before being subjected to the tyranny of an Egyptian-Ottoman ruling body in 1821. Commanded by viceroy, Ismāʿīl Pasha, the colonial affairs of Sudan were swiftly introduced to British exploitation upon Pasha's appointment of British general, Charles George Gordon, as governor-general of the Sudan in 1877. A desire to boost Sudan's imperial expansion and use of Western technology motivated Anglo-Egyptian dictators to end long-standing enslavement of Sudanese colonies in order to receive monetary aid from Western European countries (Etheredge). However, slavery had already solidified itself as a staple for Sudanese economy, the anti-slavery campaign sparked widespread frustration throughout Sudan. The increasingly rebellious attitudes towards colonial dictatorship, garnered by the said treaties, served as a backdrop to the Mahdist uprise.

Muhammad Ahmad ibn Abdallah, also known as al-Mahdī, was a Nubian Sufi and self-proclaimed descendent of the prophet Muhammed. al-Mahdī founded the Mahdist movement on the belief that Anglo-Egyptian presence in Sudan was a European Christian attempt to contravene Islamic authority (Hurst). Taking refuge in the Nuba Mountains, al-Mahdī and his followers worked to reinstate Islam into the Sudanese region. After a series of ruthless battles between 1881 and 1884, the Mahdists dominated Khartoum and warded off close to all Anglo-Egyptian powers (Etheredge).

Hulton Archive Collection. "Muhammad Ahmad ibn Abdallah." 1884.

Proving to be too strong against the joined forces of Anglo-Egyptian divisions, the Mahdist movement seemed to have taken full claim over Sudan but, this state of affairs was not to last. After the sudden death of al-Mahdī in 1885, Khalīfah Abdullah Ibn Mohamed swiftly took on the role as leader of the Mahdists. Philip Mattar and associates, in their "Mahdist State" chapter of the *Modern Middle East and North Africa*, note that Abdullah's time presiding over the movement, "transformed a tribally based, religious-nationalist uprising into a centralized bureaucratic state." The rebellion, which was now a regime, remained uncooperative with Anglo-Egyptian powers while also establishing state treasuries and taxes. Between 1896 and 1898, British Major General, Sir Herbert Kitchener, set out on a crusade to aid Anglo-Egyptian brigades and reestablish British dominance over Sudan. In the Battle of Omdurman, often referred to as the "River War" for its occurrence along the Nile, the Mahdists would suffer over 10,000 casualties. With Khartoum no longer under the control of the Mahdists, Sudan once again fell under Anglo-Egyptian repression.

In less than a century, Sudan has wrestled colonial ruling from Mahdist Arabs, Egyptian government, Ottoman Empire, and Great Britain. The presence of numerous colonial powers has stifled many of the Nubian indigenous groups once flooding the banks of Sudan's Blue and White Nile. The present Sudanese identity can be linked to the past hundred years of Nubian culture's evolution. Understanding the inexplicably complex Sudanese identity through research on the historical contexts of older Nubian mythology will never provide us the "right answers," but rather, clues to asking the right questions. Having been forced through the fiery embers of colonial dictatorship, Sudanese identity is highly nuanced to say the least. However, mythological stories can provide insight to this disarranged contemporary cultural identity. Nubian indigenous voices in folktale—sounds expressed across every bedtime story and old man's tale—may, when listened to closely, hint at connections between ancient and modern Sudanese identity. Research on Nubian mythology does not reveal solutions to colonial impact; instead, it discovers clues behind interweaving Sudanese and Nubian tradition, indigenous cultural persistence, and the collective choice to endure. A vibrant kingdom overrun by the deformities of colonialism, Nubian civilization survives despite the tremendous greed of empire. Nubian indigenous stories are, like the people who made them, persistent and long-lived. Research on Sudan's colonial eras reveals an indigenous myth that developed before a changing land and survived into modern-day Sudanese storytelling.

As a result of colonial presence, the evolution of Nubian mythology can be linked to a broken connection of Sudanese culture and collective consciousness. Anna Piepmeyer, author of "Collective Consciousness" in The University of Chicago's *Theories of Media*, describes collective consciousness as a certain mentality enabling individuals to come into view of themselves as members of a group. A trait possessed within numerous tribal cultures, collective consciousness fosters a comprehension of unnamed mythology and

maintains an unsevered connection between indigenous groups and nature. Similar to other tribal communities, Nubia thrives from the profound bond between its mythology and nature. Maintaining indigenous heritage became more strenuous as colonialism hammered collective consciousness and uprooted land.

From colonialism, Nubian homes were fortified, trickling rivers diminished into imperial positions, herds were slaughtered for textiles, and the land itself was torn from the inside out. The desperation to find identity in community waned as the lives of a million indigenous lives lay beneath the blood of billions more. The hands which once cultivated life, harmoniously lifted plows to the stubborn palm groves proliferating in pools of brownish-red dates, now stiffened wearily as they pierced the belly of Mother Earth; farmers became construction workers and "slave-soldiers" for the Anglo-Egyptian powers. Nature,

Bicar, Hussein. La Nubie se noie, (transl. "Nubia is drowning"). 1987.

Bicar, Hussein. La Nubie se noie, (transl. "Nubia is drowning"). 1987.

providing Nubia with its overflowing treasures, was suffocated from colonial settlement, and sold to the highest bidder. This complex narrative about the silencing of a civilization gains voice through modern storytellers of current Sudanese culture and tradition. Poets such as Al-Saddiq Al-Raddi, a North Sudanese literary born in Omdurman-Sudan, seek utilize their platforms to express a present-day people's search for connection to the past. In Al-Saddiq's, "Poem of the Nile," translated from Arabic to English in the 2006 *London Review of Books*, he speaks to nature as though it were a person:

River Nile
To what deserts are you taking my reflections? You depart
And I stand among the horses, by your gate,

And my soul would embark on a holy journey too,
For the silence suspended between us
Is a language floating among the ruins of a beautiful, vanished past. (Lines 47-52)

Al-Saddiq's words capture a broken relationship; they depict the curiosity of a changed people staring into the reflection of an unchanged Nile. Colonialism set Sudanese people adrift from their Nubian practices, and thus, from nature. Al-Saddiq notes the immovable characteristics of nature in relation to the impermanence of humans. The poem spotlights a deep sense of grief from within what scholars refer to as "the double tragedy"—the predicament of being detached from both nature and community.

In literature, various Sudanese poets such as Al-Saddiq allude to the double tragedy. According to the Madhya Pradesh Tribal Museum, in their museum brochure, this prevalent concept describes how modern-day humans have become detached from both myth and nature. However, by exploring the archived examples of Nubian-Sudanese mythology, people can rediscover this connection to indigeneity. Essentially, venturing the historical context of indigenous myth reveals glimpses of truth and so, from a sociological approach, Nubian folklore is emblematic of cultural persistence in the face of adversity.

Ancient myths such as *Arous el Nil*, "The Nile Bride," reveal the connection between nature and Nubian myth. According to Egyptology researcher, Bassam El Shammaa, the story first emerged from Greek historian, Plutarch, between 46 CE and 119 CE. Like most other myths, "The Nile Bride" has been told under various lights and cultural viewpoints. In its original telling, the myth centers around King Egyptos. It was said that King Egyptos sacrificed his daughter to appease the Gods, but that regret soon led him to commit suicide in the same manner. Though Shammaa deems this tale as greatly inaccurate to Egyptian mythology, the myth itself links the wellbeing of a people to the Nile. Nubian versions of "The Nile Bride" begin with a festival in which streets

scattered in clay and decorated with flags carve the map of a small village. Plucked from a pool of women, the village's most heavenly young virgin is taken to the Nile River. Chosen based on the belief that her sacrifice would bring forth an abundant season, the woman is adorned in cloths of refined white. Ghada Abdel Hafeez, author of "The Nile Bride Myth 'Revisioned' in Nubian Literature" in *Dotawo: A Journal of Nubian Studies*, notes that in many Nubian renditions the woman starts hearing supernatural voices of spirits known as "the River People" (Hafeez 182). Beneath her stoic figure, the river's frothing splashes draw the woman to its depths. As she gazes towards the sun, the woman is thrown from her perch and wed to the Nile forever.

Due to their similar proximity to the Nile, both Egypt and Sudan have stakes in this story. Both cultures retain strong influences from indigenous Nubian folklore and its sincere connection to the Nile. Haggag Hassan Oddoul, a prevalent Egyptian-Nubian activist and writer of "Nubian Writers and Racist Critics" refers to Nubian folk as the "brothers to this enchanting [Nile] river" (67). The profound linkage of Nubia and the Nile is reflected in both Nubian mythology and in Sudanese or Egyptian folklore. In fact, the entirety of mythology can be viewed as a sewing up of indigenous contemplation and historical contexts.

"The Nile Bride" myth inspires controversy among many historians and feminists. In her journal, Hafeez also observes the tendency of traditional mythology to serve as a medium for patriarchal indoctrination of genuine cultural values (170). However, in contemporary renditions of ancient myth there is a gradual evolution to fit into newer societal norms. Certain retellings of ancient myths such as "The Nile Bride" empower the faceless women character by giving her dreams, beliefs, or a name. An example of this can be viewed in the revisions of writers like the aforementioned, Haggag Hassan Oddoul. In Oddoul's 2005 publication, *Nights of Musk: Stories from Old*

Fahim, Munir. Nubian Bride. 1978.

Nubia, Asha Ashry is a woman who challenges patriarchal customs, denies marriage proposals from men she does not love, and ultimately, chooses to give herself to the Nile. For his work, Oddoul is credited for "endowing his protagonist with vitality, power and agency not given to any Nile Bride before…not only strengthening and empowering Asha but also his readers" (Hafeez 182). Though Oddoul's story can still be read as limiting women's voice and visibility, much like the original myth, his characters perform as major steps that both affirm the relationship between Nubian people and nature as a source of identity.

For people including me, who have never stepped foot on the soil of Sudan nor witnessed the Nile with our own eyes, mythology serves as an indigenous tether between Nubian-descended people and the Nile. Mythology creates this profound and unspoken connection much like the way trees survive from the roots that cannot be seen above ground. In a way, the evolutions of Nubian myths surpass the harsh realities of colonial conquest and double tragedy. Furthermore, the reinvention of Nubian folklore give these

stories a focal role in Sudanese upbringing and implies rebellion against severance from indigenous cultural identity. Sudanese revisions of old Nubian mythology, such as Oddoul's example with "The Nile Bride," clear a pathway for Sudanese individuals to connect with Nubian collectivistic consciousness. The steady admiration and reverence for nature in Nubian myth cements this idea within Sudanese culture and fosters the cultural values and beliefs of future generations.

How will future generations extend the legacy of Sudanese identity through myth? The admiration younger generations form for their culture does not derive from colonial recollections, but from a cloth of history stitched with stories. Mythology prompts a Sudanese culture that pushes against the forces of persisting colonial impact. Stories commonly shared with children, such as "The Mouse and the Beetle" or "Oh Head, What Cut You?" (شِن قطعك يا راس) serve as pillars for Sudanese identity. Expanding technology has made mythology accessible to anyone. The two previous folktales were retrieved from a blog by author and Professor of Sudanese Colloquial Arabic: Muna Zaki. Decade-long blogs like *Muna Zaki* highlight the significance of Sudanese proverbs to preserving Nubian belief systems including connections to nature or maternal love. "The Mouse and the Beetle" is a folktale based on the sayings of a Sudanese proverb, "الخنفُسانة شافت ولدها في الحيط قالت دا لولي ملضوم في خيط" translating to, "The dung beetle saw its son on the wall and said, 'these are pearls put together on a string'" (Zaki). The story centers around an outgoing beetle married to a simple mouse. One day, while the beetle ventured out to wash her *shamla*, a sudden haboob blew her onto a tiny island across the river. On this island, from beneath blades of grass, the beetle shouted at a human boy and was entertained when he ran to tell his mother. The mouse, having witnessed the beetle's foolish prank, felt frustrated for making the two of them subjects of gossip. After being taken home aboard the mouse's back, the beetle naively jumped for joy at the sight of her ugly children who,

to her, were as beautiful as pearls pulled together on a string. The moral of the mouse and beetle tale suggests that parental love is both blind and unbreakable. As demonstrated by the beetle, who only cares for her own children, the story also implies that maternal love is exclusive and precious. Various other Sudanese mythologies emphasize an admiration for mothers. For instance, University of Southern California's Digital Folklore Archives reveals the Sudanese proverb, "القرد فى عين امه غزال" translated to, "The monkey in his mother's eyes is a gazelle." These sayings reveal a culture which strongly values motherhood and spotlights maternal figures as deserving of respect. With its recurring themes, modern Sudanese folklore stimulates an identity rooted in a transformed Nubian indigeneity and cultural unification.

In these stories, one can hear of nature, a mother's love, and playful spirits to connect with values of past generations. These lessons remain unchanged despite the difficulty Nubian descended people have endured. Another Sudanese folktale, "Oh Head, What Cut You?" tells the story of an Arab man who discovers a talking skeleton head in the desert. One day, an Arab man was traveling the desert on his donkey when he stumbled upon a skeleton. Intrigued by what he saw, the man leapt off his donkey and moved closer to the skeleton. With an unexpected jolt, the skeleton head began to speak. "It is my tongue that cut me," the head proclaimed (Zaki). Amazed by the skeleton head's ability, the man swiftly mounted his donkey and returned to his village, where he implored the leader and council members to follow him back into the desert. Slightly convinced by the man's words, the leader and his council reluctantly agreed. Now at the location of the skeleton, the man prompted the head to speak once again. Requests quickly turned into pleas, but alas, the skeleton head gave no reply. Outraged, the leader and council members found the man's actions to be forms of mockery and foolishness. Without hesitation, the leader cut off the man's head and left again for the village. Still and

bewildered, the man listened as the skeleton head began to speak just as before. The confused skeleton head cried out, "Didn't I tell you that my tongue cut me!?" (Zaki). Moments later, the man let out his final breaths. "Oh Head, What Cut You?" emphasizes the belief that, at times, silence is the wisest decision. Silence is wise not only in the face of danger, but in the event of uncertainty. Many of these stories, conveyed in the form of children's tales, engrave survival as a value within a matured Sudanese identity that is both strategically cautious and respecting of wisdom. Knowing when to listen and when to speak out are values that have to do with self-preservation in the face of threats, and so the story hints at the perspective of people who strategically endured oppression.

Though modern-day Sudanese stories pose values cemented in a powerful cultural identity, they did not begin as such. In fact, the melodic compositions of *Sudani* individuals stem from the rigid dissonance of colonial attempts for control on Nubian identity. A major factor in the evolution of Nubian-Sudanese mythology is the Arabization of indigenous culture. Arabization, also known as *ta'rib*, is a term referring to the progressive influence of Arab language and culture on Sudanese identity. According to B.G. Haycock, author of "Medieval Nubia in the Perspective of Sudanese History" in *Sudan Notes and Records*, the medieval period of Nubia should no longer be referred to as the "historical backcloth to 'the coming of Arabs'" (18). A false understanding of Arabization in Nubia works to erase pre-existing indigenous presence. Research studying the influence of Arab immigration in Sudan reveals how Arab culture rewrote aspects of Nubian identity. "Medieval Nubia," a collection exhibited within The Oriental Institute of the University of Chicago's Nubia Gallery, traces the evolution of Arab incursion in Sudan through various artifacts and recovered images. Newfound symbols of art and architecture including quartz-embellished buildings, silk-embroidered tapestries, and vibrantly pigmented pottery display the

influence of Arabization on Nubian heritage. These objects remain evident of the gradual emergence of Arabic and Islamic beliefs within Nubian capitals and strongholds.

By the early 18th century, Mamluk (Turkic) rulers of Egypt and the Ottoman Empire had consumed the three Nubian kingdoms of Noubadia, Makuria, and Alwa ("Medieval Nubia"). After the decline of Christian influence, stemming from Byzantine missionary conquests in 600 AD, the Nubian capital of Makuria was bombarded by an Arab army in roughly 641 AD. Amidst the chaos of 651 AD treaties and "agreements" from the higher colonial powers, the indigenous communities of Nubia suffered from "royal monopoly" ("Medieval Nubia"). With trade epicenters in Aswan and Qasr Ibrim, controlled by Muslim merchants of Turkic descent, everything from ivory, gold, and enslaved Nubian individuals were sold throughout these ("Medieval Nubia"). In this, the evolution of Nubian indigenous mythology can be linked to severe impact from the *ta'rib* (Arabization) of Sudanese culture.

In more recent centuries, colonial dictatorship pooled Nubian indigenous tribes into a singular mold. Arab and British powers cared little about the drastically different customs and traditions possessed by neighboring indigenous Nubian groups. This imperialist perspective that all Nubian folk fell under the same meritless category generated a newfound "Sudanese" identity. Heather J. Sharkey, author of "Arab Identity and Ideology in Sudan: The Politics of Language, Ethnicity, and Race" in *African Affairs,* notes the term 'Sudanese' (*sudani*) as an Arabic reference to Blackness containing particularly servile connotations (21). Colonial powers attempted to assert dominance over Nubian communities by tagging the natives as obsequious in nature. The enforcement of the labelled "Sudanese" identity, though reclaimed today, stems from a forced reverence of Arabic culture.

"One Thousand and One Nights," also known as, "Arabian Nights," is renowned as one of the most influential compositions in the history of literature. Anchi Hoh, blog writer for the Library of Congress and author of *A Thousand and One Nights: Arabian Story-telling in World Literature*, traces the origins of this folktale to 9th century Baghdad. Though no single story is the archetype, common narrations of "Arabian Nights" center around a woman, Shahrazad, whose enchanting stories managed to temporarily subdue Khalifah Shahriyar's cruel routine of sleeping with different virgins each night and killing them by dawn. This research references the English translations of Sir Richard F. Burton in *The Book of the Thousand Nights and a Night* (pub. 1888), which he based on the earlier French translations of Antoine Galland in *The Arabian Nights' Entertainments* (pub. 1704).

Nubian characters primarily appear in the "Tale of the Ensorcelled Prince," told by Shahrazad to captivate Khalifah Shahriyar from the seventh dusk to the ninth. In this tale, Shahrazad's words paint the picture of a young prince presiding over four mountains known in the story as the Black Isles. Soon, after overhearing the gossip of his enslaved servants, the prince discovers his cousin-wife committing adultery with one of her Black slaves. Watching in horror from afar, the prince describes the scene as, "my fair cousin had gone in to a hideous negro slave…he was to boot a leper and a paralytic…wrapped in an old blanket and the foulest rags and tatters" (Burton 71). The Black slave is said to have cursed out the

Ford, H.J. "Tale of the Ensorcelled Prince."
The Arabian Nights' Entertainment, 1898.

wife who humbles herself before him. Despite the various obscenities, including being called the "vilest of the vile whites," the wife continues to undress herself and consume the

Black slave's leftover concoction of broiled rat bones (Burton 72). In the morning, when the wife returns to the palace, the enraged prince leaps from his hiding place and strikes the Black slave. After hearing word of this, the wife turns half of the prince's body to stone and the kingdom falls to ruin.

The portrayal of the Black slave within this Arabian folklore reinforces a hegemonic culture in which Nubian people are liminal to the centered characters of a fairer-skinned dominant group. The Black slave's repugnant demeanor frames his character as a threat to the cultural hierarchy and a deviant existing in the realm of trickery. This depiction, when paired with the wife's chaotic act of infidelity, expresses a continuous tension brought upon by fear of usurpation. The concept known as non-hereditary Blackness can be used to analyze these Arabic myths and the role of Nubian people within them. Non-hereditary Blackness refers to the ways Black identity is deeply connected to the land one occupies. Literary critic, al-Jahiz (c. 779-868 or 9), frequently explored the prevalence of non-hereditary Blackness within Arab-occupied Nubian homelands. In

Lithographs from Sir Richard F. Burton's Arabian Nights, archived 2012

the *Critical Muslim* magazine article, "The Dark Side of 'The Arabian Nights,'" al-Jahiz is quoted as claiming, "if blacks moved into the clime, or zone, occupied by the Arabs, over time they would lose their blackness." When applied to the "Tale of the Ensorcelled Prince," non-hereditary Blackness can be used to illustrate Nubian presence within Arabic folklore as the driving force of contemporary disconnections from Nubian identity.

The Black slave character only appears within a small segment of the overarching plotline---a story within a story. By serving as a background character to "white" protagonists such as the prince and his wife, the Black slave is made less visible,

significant, and real. Non-heredity Blackness acknowledges the marginalization of Nubian people within larger discourses; it understands the ways in which Nubian existence is depicted as entities compelled to upset the balance and cohesiveness of the culture. From these tales, readers are forced to view a noble prince robbed of his life, an innocent wife robbed of her dignity, and a menacing 'negro slave' responsible for stealing it all. Lack of agency and grotesque portrayals of Blackness can be seen as focal agents steering Nubians away from Black and indigenous elements of their identity. This avoidance, which can be ascribed as a means for self-preservation, evolved into modern day as an instinct heavily engrained within the culture.

For years, a warped sense of identity and evasion of Blackness within my own family denied my siblings and I of our Nubian history. From an early age, I was immersed in a Sudanese culture that was filtered by Arabic tradition. It is difficult to comprehend Nubian identity when I have witnessed the impact of Arabic predilection on stories including those of my own birth. With curious eyes like large almonds resting beneath a fountain of pin-straight strands, my *khaltos* (maternal aunts) praised my mother for birthing a child with "the good hair." Being "good," which in this case meant being as distant from Blackness as possible, can divert one from genuine self-acceptance. In many ways, I believe my relatives' desire for Arabness derives from their overt longing to reject the adversities forced upon Black culture. Only with time have I come to understand this Nubian culture and mythology as history books kissed by fantasy and wonder. A source of remembrance to diverse communities, folklore births the true nature of Sudan, whom medieval Arab geographers named, the "land of the Blacks." The beauty of Nubian myths derives from their ability to retain similar meanings throughout evolution. Dripping off the lips of a million unique individuals, tribal accomplices and adversaries alike were bound by

mythology. In short, folklore is a timeless beacon shining down on an audience forever graced by its influence.

Myth is a vehicle for heritage, it illustrates strife and faith as parallels travelling across a similar plain of consciousness. With stories, indigenous communities make hope attainable by fostering dreams of reparation. In many cases, Nubian communities displaced from their homes along the Nile would reimagine broken spaces and heal hardened wounds of the past through folklore. This reconciliation, achieved through myth, continues to depend on people. Spanning from Nubian ancestry to present-day Sudani communities, humans remain the leading repositories of memory. Unique perspectives on tales allow indigenous pasts to remain ingrained in stories, and thus, accessible to children of the culture. It is easy to fear the disconnect between modern individuals and indigenous ancestry—to collapse beneath the veil of assimilation. However, myth makes perseverance possible across hundreds of generations. Through these imagined human predicaments of hope and liberation, modern cultures unite with ancestry in moments of deepest oppression. In other words, where colonial eruptions suffocate lands with obscured identities, indigenous mythology uplifts with potential to see more clearly.

Despite the detriments of continuous colonial periods, Nubian mythology still works to shape modern-day Sudanese culture and identity. The exploration of Nubian-Sudanese folklore reveals powerful resistance against colonial alienation. To solidify indigenous presence in Sudanese identity, Nubian tales allowed culturally significant messages to nurture future generations. From the tail of the Nile River to the mouth of the Red Sea, Nubia is a land which embraces mythological evolution and resists colonial occupation.

The few memories I have with Jidu, prior to his passing, remain significant. For me,

Jidu was the repository of a distant past and the only relative whose imagination uniquely

saw myths as I did: pathways leading to home. In the literal sense, Jidu embodied an

important figure as the eldest member of my family and the last person to speak

Dongolawi—his first language. To say my connection

to Nubian heritage lived with Jidu would be to imply it

died with him as well, but such a statement could not

be more untrue. Instead, I believe Jidu planted the

seed to what has grown into a remarkable and

essential tree of memories. Uncovering Nubian

mythology within the Sudanese culture of my

upbringing has awakened a curious child within me,
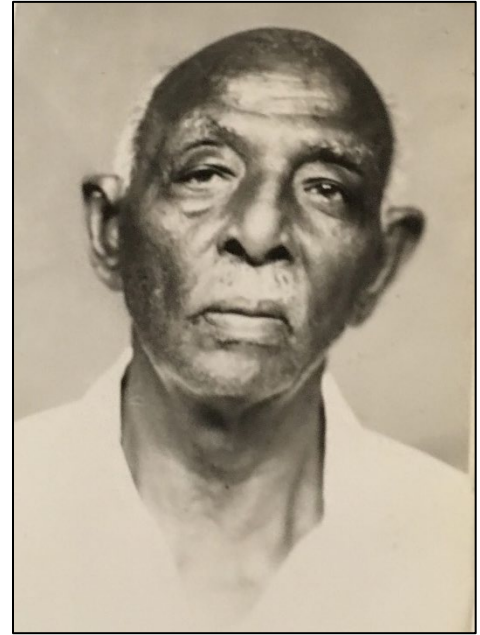
one which never ceases from wonderment and

Image of Saved Suliman (Jidu). No date.

admiration for Nubia's unparalleled ability to endure. I am beyond grateful for the

opportunity to understand the evolutions of Nubian-Sudanese identity and mythology as a

means of unification. Being fully encouraged as a learner is a powerful source of pride,

one allowing me to share worlds of information with the rest of my family. Nubian

mythology provides an anchor to the past and invites younger generations to further

discovery. By tuning our ears outside the static of colonial oppression, we can promote

cultural indigenous identity rooted in community, remembrance, and endearment.

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Biology

Bahameen Farrukh
"Understanding the Genetics of Progeria
and Broader Implications for the Genetics of Aging"

Mentored by Dr. Linda Jurada
Montgomery College

"Bahameen's paper was well written and researched with detailed information from several sources. The presentation answered all questions, provided images to help enhance information, and summarized the written information well. Great job!"

Dr. Allison Mass Fitzgerald
Associate Professor of Biology
New Jersey City University

Understanding the Genetics of Progeria and Broader Implications for the Genetics of Aging

Bahameen Farrukh

Montgomery College

BIOL 222: Genetics Honors Module

Professor Linda Jurata

November 24, 2022

Abstract

Genetic abnormalities cause the premature aging disorder Hutchinson-Gilford progeria syndrome (HGPS), which has crippling clinical characteristics. The root cause of Progeria is a single gene mutation in the Lamin A (LMNA) gene which produces "progerin", the aberrant protein which contributes to the aged phenotype of children with Progeria. Recently, it was discovered that the presence of Progerin is also a marker for normal aging. This review covers the current understanding of molecular mechanisms that contribute to the pathophysiology of HGPS, the implications of their resemblance to natural aging, recent medication development, and the methods being investigated in vitro and in vivo to counteract progerin-induced cellular dysfunctions.

Introduction

Hutchinson-Gilford Progeria Syndrome is an autosomal dominant disease resulting from a C-T nucleotide base substitution mutation on chromosome 1 of the LMNA gene (Koblan et al., 2021). Patients diagnosed with this "premature aging" condition, exhibit characteristics that could provide insight into the normal aging process at both the cellular and organismal levels (Lamis et al., 2022). Normally, the LMNA gene makes proteins needed to hold the nucleus of the cell together (Mayo Clinic, n.d.). However, the mutated form of LMNA produces a protein called "progerin," which causes cellular instability by damaging nuclear structure and function leading to premature cell death (Lamis et al., 2022).

A de novo point mutation in the LMNA gene at codon 608 of exon 11 on chromosome 1 is almost entirely responsible for the physical manifestation of HGPS (Lamis et al., 2022). Three nuclear laminae proteins, Lamin A (LA), Lamin C (LC), and Lamin 10, which form an intricate molecular interface inside the inner nuclear membrane, are known to be encoded by the LMNA gene (Lamis et al., 2022). The lamina plays a crucial role in several cellular functions such as

transcription, maintenance of nuclear shape, the replication of DNA, cell division, as well as chromatin organization (Lamis et al., 2022). The normal pre-LaminA protein is farnesylated (a post-translation modification) at the carboxy-terminus, but this is normally cleaved. Due to the 50 amino acid deletion, Progerin is missing the cleavage site, and so remains farnesylated. This causes the Progerin to distort the shape of the nuclear envelope in order to allow excess Progerin to enter the cell (Lamis et al., 2022). Progerin is also produced increasingly throughout normal aging. However, instead of splice site errors, progerin production in normal aging can be attributed to the age-associated increase in the expression of the LMNA gene (Luo et al., 2013). It has been hypothesized that this increase in LMNA transcript levels serves to compensate for the declining nuclear function in aging muscles (Luo et al., 2013).

Children with progeria have an abnormally small face, excessively large eyes, a short nasal bridge and tip, a small jaw, malformed and crowded teeth, and micrognathia, a condition in which the lower jaw is smaller than normal (Lamis et al., 2022). The phenotype fully mimics normal aging elderly individuals, with balding and hair loss being characteristic features of progeria as well (Lamis et al., 2022). However, this disease does not restrict the neuromuscular movement and psychological development of patients (Koblan et al., 2021). The average lifespan of diseased individuals is approximately 14 years after which death is an inevitable result of heart diseases or strokes (Lamis et al., 2022; see also Koblan et al., 2021).

As of 2022, approximately 350-400 individuals are affected by progeria, meaning it is an incredibly rare disease (Lamis et al., 2022). Therefore, despite the severe devastation it causes to an affected individual's bodily functioning, minimal research has been conducted on the disease up until recent years when it was discovered that HGPS and normal aging are result in many similar cellular changes. This review article aims to provide a background for the genetic basis of progeria and to establish its position as a true representation of normal aging, along with discussion of current treatment options that could serve to benefit normally aging individuals as well.

Similarities between HGPS and Normal Aging

Aliper et al. conducted a study on HGPS which shows that virtually all well-known traits of "normal" aging are replicated in progeria, from cellular to organismal levels (2015). For the study, fibroblasts from various age groups and HGPS patients were used to compare gene expression changes associated with aging to those seen in HGPS patients (Aliper et al., 2015). Remarkably, this study confirmed the fact that signaling pathways in Hutchinson-Gilford Progeria Syndrome were more similar to those of healthy middle aged and elderly persons than the ones found in younger individuals (Aliper et al., 2015).

One of the first pathways observed was the caspase cascade pathway responsible for apoptosis (controlled cell death) whose gene expression clearly increased in cells as the number of passages increased (Aliper et al., 2015). In fact, normal aging cells as well as cells obtained from progeric patients both showed increased caspase cascade working (Aliper et al., 2015). On the other hand, EGFR, pathway responsible for wound healing, showed reduced expression with the normal course of aging (Aliper et al., 2015). The EGFR pathway in HGPS patients too, showed reduced working (Aliper et al., 2015).

Moreover, the analysis was able to show that cells from middle-aged and elderly people had increased mRNA levels for proteins involved in the ERK pathway (responsible for communicating environmental stimuli to the nucleus) similar to those seen in cells from HGPS patients (Aliper et al., 2015). Likewise, growth hormone and mediator associated pathways too (responsible for the release of the growth hormone in the bloodstream), showed increased activity in both HGPS patients and normal aging elderly individuals (Aliper et al., 2015).

Furthermore, in aged cells, the MAPK pathway is the primary regulator of the pro-inflammatory response (Aliper et al., 2015). According to the pathway study by Aliper et al., the

gene expression of the altered MAPK pathways in middle-aged and elderly samples increased significantly (Aliper et al., 2015). A similar increase in MAPK activity was also observed in HGPS patients (Aliper et al., 2015). Comparably, mitochondrial malfunction that is linked to sarcopenia (a condition in which the function and muscle mass of the skeleton deteriorates with age), and its associated pathways were also shown to have a decreased working similar to that of progeric cells (Aliper et al., 2015). However, the decrease in mitochondrial pathway activity in HGPS patients and elderly individuals compared to younger persons was nominal (Aliper et al., 2015).

Additionally, the mTOR pathway responsible for various cellular functions showed an increased gene expression among both elderly individuals and patients of HGPS (Aliper et al., 2015). In the same way, nuclear receptor mediated PPAR pathways that are involved in several cell functions such as development and metabolism were found to show higher expression in both HGPS individuals as well as middle-aged and old age persons when compared to cells from younger individuals (Aliper et al., 2015).

Finally, SMAD-associated pathways involved in the aging of the skin, TGF-β-associated pathway involved in specific features of aging in different ethnic groups, and transcription associated pathways involved in differing protein expression all were found to have an increased working in both HGPS patients and middle-aged and elderly individuals (Aliper et al., 2015). This data strongly suggests that HGPS is, in fact, an accurate representation of accelerated aging and that scientific developments in progeria could possibly be applied to the normal aging and vice versa (Aliper et al., 2015).

Inhibition of DNA Damage Response to improve HGPS phenotypes

Telomere disruption, which results in DNA Damage Response (DDR) activation and an increase in the number of senescent cells, is a hallmark of organismal aging (Childs B.G. et al., 2017). Several aspects of physiological aging are accelerated in animal models of telomere

dysfunction, such as that brought on by telomere shortening following telomerase inactivation in mice (Jaskelioff et al., 2011). However, the exact role of DDR activation in aging remains unclear (Aguado et al., 2019).

Aguado et al. conducted a study to demonstrate how the telomere dysfunction caused by the expression of progerin leads to the transcription of telomeric noncoding RNAs (tncRNAs), and how inhibiting these tncRNAs with telomeric sequence-specific antisense oligonucleotides (tASOs) improves tissue homeostasis and lengthens lifespan in a transgenic HGPS mouse model (2019). Treatment with telomeric ASOs reversed proliferative abnormalities and prevented cellular senescence in both mice and human HGPS cell lines without affecting other characteristics of progeroid cells, such as altered nuclear envelope shape and loss of heterochromatin, supporting the idea that the presence of tncRNAs is in fact a signal of telomere dysfunction in HGPS (Aguado et al., 2019). The tASOs were able to significantly reduce DDR activation as well as HGPS induced skin damage in mouse models (Aguado et al., 2019).

Two tASO treatments: anti-teloG and anti-teloC (complements of either telomeric RNA strands) were administered to both HGPS mouse models as well as cultured cells (Aguado et al., 2019). Both tASOs were able to inhibit DDR activation in vitro (Aguado et al., 2019). However, anti-teloG was found to be the more effective tASO treatment in vivo was anti-teloG, notably increasing the average lifespan of mice while anti-telo C had little to no effect (Aguado et al., 2019). The reasoning behind the observed discrepancies in vivo is suspected to be the suboptimal tissue distribution of anti-teloC which can be supported by the fact that it had a lower detection rate in the skin of the HGPS mouse model (Aguado et al., 2019).

The findings of this study were able to isolate DDR activation and not its precursor (DNA damage) as the cause of the detrimental phenotype associated with HGPS (Aguado et al., 2019). It also confirmed HGPS as a telomere dysfunction disorder making it once again, akin to normal aging in healthy individuals.

Additionally, it is important to note that the results of this study could be applicable to all telomere dysfunction diseases in which DDR activation plays a central role (Aguado et al., 2019). With DDR signaling at defective telomeres shown to be effectively inhibited by ASOs against tncRNAs, ASOs have now been singled out as a viable treatment option not only for HGPS but possibly for all other conditions characterized by telomere dysfunction including normal aging (Aguado et al., 2019). Even so, more research is needed to identify the exact role of DNA Damage Response activation in aging so that the root cause of cellular devastation in HGPS patients as well as other telomeric dysfunction conditions (such as normal aging) can be targeted and eliminated.

In Vivo Base Editing and HGPS

Koblan et al. obtained data from progeroid mice and cultured cells taken from progeric children to test their hypothesis that gene editing methods like Adenine Base Editors (ABE) could be successful in correcting the root cause of progeria (2021). Their hypothesis was supported both in vitro and in vivo with progeroid mice treated with an ABE targeting progerin not only showing reduced amounts of progerin in cells but also showing doubled life spans with the editing being mostly on-target (Koblan et al., 2021).

With a single injection of the dual AAV9 vector encoding the adenine base editor and a single guide RNA targeting the progerin-producing mutation, the virulent allele in HGPS mouse models was corrected and RNA mis-splicing as well as the expression of progerin in tissues were both reduced significantly (Koblan et al., 2021). Damage to the aorta was virtually reversed as vascular smooth muscle cell counts and adventitial fibrosis were fully rescued in progeric mice treated with ABE at postnatal day 14, which corresponds to approximately age 5 or 6 in humans (Koblan et al., 2021). These findings are especially noteworthy since cardiac diseases are the leading cause of progeric fatalities (Koblan et al., 2021).

Furthermore, the doubled lifespan of the progeric mice (as a result of adenine base editing) shows potential for increased lifespan in human HGPS patients as well (Koblan et al., 2021). However, more research needs to be dedicated to this treatment method before it is introduced in human HGPS patients because despite the numerous benefits, the ABE treatment was also found to cause liver tumors in the HGPS mouse models, most likely due to the AAV9 viral vector used to deliver the editing machinery (Koblan et al., 2021).

Minimal DNA editing has the potential to yield great benefits at the cellular level (Koblan et al., 2021). For instance, only 25% gene editing in the aorta of the postnatal day 14 injected mice led to an 11 times greater vascular smooth muscle cell count, 5 times decrease in adventitia fibrosis as well as a lack of progerin expressing nuclei (Koblan et al., 2021). The disproportionate advantages of DNA editing imply that modified cells may make a relatively large contribution to the wellbeing of tissues in the HGPS mouse model (Koblan et al., 2021). This could be because edited cells proliferate more, and so take over the function of the tissue. In addition, adenine base editors could most likely be coupled with recently developed progeria treatment options such as Lonafarnib and tASOs to maximally target the disease (Koblan et al., 2021). However, to fully comprehend the true potential of such treatments, and before introduction of ABEs to human HGPS patients, significantly more research needs to be conducted on the matter to minimize harm.

Discussion

The aforementioned research findings support the fact that Hutchinson-Gilford Progeria syndrome is accurately termed as an accelerated aging disease. Both the cellular, as well as phenotypic manifestations of HGPS mimic those found in normal middle-aged and elderly individuals. The similarities between HGPS and normal aging stem from sharing the same signaling pathway profiles as well as from both being related to telomeric dysfunction. This means that there is a high probability that the development of treatment options for progeria could potentially serve to treat the normal aging processes or vice versa.

Despite the rarity of the disease, pharmaceutical companies such as Eiger BioPharmaceuticals' are actively pursuing the development of treatment options for Progeria. In July 2022, Eiger BioPharmaceuticals' was successful in gaining authorization by the European Commission for the open marketing of "Zokinvy" or Lonafarnib a Progeria medication that increases patient life expectancy up to 4.3 years. Lonafarnib is a farnesyltransferase inhibitor that prevents the buildup of defective progerin or progerin-like protein in the body (Lamis et al., 2022). Zokinvy is one of the first approved treatments for Progeria to reach the markets and an understanding of its working is imperative to the understanding of Progeria and the development of future (more effective) medication.

As seen with pharmaceutical companies like Eiger BioPharmaceuticals, the interest surrounding progeria has significantly increased since its relationship with normal aging was solidified. Prior to the early 2010s, before HGPS was confirmed to be a truly accurate representation of accelerated aging, there had been little to no research on the disease despite the devastation it caused to patients. Understandably because HGPS is such an incredibly rare disease, it would be nearly pointless to devote major capital, time, and energy on the development of such a low-payoff cure. However, since the connection between HGPS and normal aging has now been well-established, pharmaceutical companies are willing to invest capital into its research.

Zokinvy (Lonafarnib), along with slightly increasing the lifespan of progeric patients, miraculously also rescues HGPS associated phenotypes reducing some of the effects of aging such as vascular stiffness, carotid artery echodensity and improves sensorineural hearing loss (Kliegman, 2020). Understandably, this medication is not targeted towards the 350-400 individuals diagnosed with Hutchinson-Gilford Progeria syndrome but instead is potentially targeted towards the millions of normally aging individuals with similar symptoms.

Ulterior motives for pharmaceutical companies or not, the increased attention HGPS has been receiving recently due to its association with normal aging has supported its research

tremendously. However, much more research is needed to truly understand the genetic basis of the disease before viable treatments that significantly increase the lifespan and health of progeric patients can be introduced to HGPS patients.

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History

Isaiah Gonsalves
"The Internment of Japanese Americans
and the Declaration of Martial Law in Hawaii: The Impact of Racial and
War-Related Prejudice After the Pearl Harbor Attack"

Mentored by Scott Rudd
Monroe Community College

"Isaiah's excellent research and ability to place the events of Japanese internment in its historical context tells a nuanced story of the aftermath of Pearl Harbor. Isaiah is able to draw parallels to the modern day by explaining the choices that were made in the face of fear. His presentation and ability to answer tough questions was outstanding and shows a clear understanding of the topic. Most notably was his desire to further his research as he vigorously took notes during our question/ discussion period after his presentation, Congratulations Isaiah on a job well done!"

Dr. Gene Fein
Professor of History
SUNY Purchase

The Internment of Japanese Americans and the Declaration of Martial Law in Hawaii: The

Impact of Racial and War-Related Prejudice After the Pearl Harbor Attack

INTRODUCTION

The desire to minimize the potential weaknesses of one's country, limit the

advantages of the opposition, and sustain awareness of possible security threats

remain enormously significant concerns to the government during periods of extreme

war-time stress. Nevertheless, such factors may also lead to paranoid and irrational

behavior by the government and individuals influenced under government rule. The

state wishes to maintain a clear and defined view of its enemy and those who could

cause harm to the citizens of its nation. However, government officials may give way to

emotionality in these high-tension situations, enacting laws and government actions that

lead to the discrimination of a specific group as possible enemies. Individuals who

belong to that particular group may become the subject of suspicion and presumption of

possible guilt without evidence or cause. In this paper, I will examine how racial and

war-time prejudice contributed to the internment of Japanese Americans in

concentration camps during World War II United States. I will specifically investigate

how bias and discrimination impacted the internment of Japanese Americans residing

on the Hawaiian Islands and the implementation of martial law in the territory.

A BRIEF HISTORICAL BACKGROUND OF HAWAII AND THE SUGAR PLANTATIONS

In 1795, King Kamehameha successfully unified the Hawaiian Islands, and the land prospered under the rule of its monarchs (La Croix 11). However, the Hawaiian sugar industry, which began in the 19th century, significantly altered the makeup and economy of the islands (Takaki 33). In the mid-19th century, political reforms in Hawaii, including the transition to private property rights, created favorable conditions for establishing and expanding sugar plantations (La Croix 13). These plantations required a large amount of labor to work in fields and factories, increasing the demand for workers. In 1835, most of the population consisted of Hawaiian people, with foreigners only comprising a tiny percentage — around .55% or 600 individuals out of 108,000 (Takaki 33). However, at the same time, the native Hawaiian population experienced a significant decline[1], with a 50% drop in numbers between 1831 and 1866 (La Croix 11, 13). In response, the government passed legislation in the 1860s allowing sugar planters to bring in contract laborers from other countries to work for fixed wages for a maximum of 10 years (13). In the 1870s and 1880s, Chinese workers were brought to Hawaii on 5-year contracts, but many left the plantations at the end of their contracts (13). As a result, many Japanese workers were brought in from 1885 to 1900, with over 80,000 arriving on 3-year contracts (13). By 1920, people of Hawaiian ancestry made up only 16.3% of the population, while Japanese made up approximately 42.7%, Caucasians made up 19.2%, Chinese made up 9.2%, Filipinos made up 8.2%, Puerto Ricans made up 2.2%, and Koreans made up 1.9% (Takaki 33). The sugar industry significantly expanded from 1835-1920, with Hawaiian plantations producing approximately 556,871 tons of sugar, making it the leading industry on the islands (33).

The significant decrease in the native Hawaiian population and the rapid growth of an indentured labor force remained crucial factors in the 1893 overthrow of the Hawaiian monarchy and the reduced political influence of native Hawaiians under U.S. rule (13). In the 1830s and 1840s, King Kamehameha III — motivated by the potential for high returns from exporting sugar grown on the increasingly thinly populated or abandoned lands, as well as a desire to increase government revenue — decided to allow native Hawaiian chiefs to form partnerships with foreign states to start sugar plantations (13-14). In the 1860s, the growth of significant sugar plantations in Hawaii, many owned by foreigners or Caucasian residents with close ties to the United States, transformed the political economy of the islands by connecting Hawaii's sugar exports to the U.S. market and linking the island's labor market to Asian and European labor markets (14). A reciprocity treaty facilitated the integration of the Hawaiian sugar industry with the U.S. market in 1876, allowing Hawaiian sugar companies to sell their products in the U.S. market without paying tariffs, typically 20-40% of the U.S. market price (14). This arrangement was lucrative for sugar companies but also led to a loss of local control over the sugar industry as it incentivized sugar agencies and plantations to oppose any changes to the political system that generated the companies' returns (14). In 1887, when the renegotiations of the reciprocity treaty were jeopardized by new demands from the U.S., including the right to maintain a coaling station at Pearl Harbor, a group of foreigners used force to pressure King Kalakaua to sign an amended version of the treaty that included additional concessions to the U.S. and to approve constitutional changes that increased the already significant power of foreigners in the government and electorate (14). The 1887 Bayonet Rebellion and the resulting coerced

changes to the Hawaiian Constitution indicated the ascendency of foreign interests and the inability of Hawaii's police and military to prevent the use of coercion against the Hawaiian government (14). In 1893, a group of foreigners executed a coup d'état and overthrew Queen Liliuokalani to annex Hawaii to the United States, and in 1898, the U.S. successfully annexed the Hawaiian Islands (15). Congress then passed the Organic Act in 1900, in which Hawaii became a territory of the United States (15).

THE INTERNMENT OF JAPANESE AMERICANS

On December 7, 1941, the Japanese Empire attacked the United States at the Naval Base located in Pearl Harbor, Hawaii, causing widespread fear about national security, particularly on the West Coast ("Executive Order 9066"). In the aftermath of the bombing of Pearl Harbor, President Franklin D. Roosevelt issued Executive Order 9066 on February 19, 1942, authorizing the forced removal of Japanese Americans living in the western United States (Nagata 36). The executive order affected three generations of Japanese Americans, the first-generation immigrants (Issei), the second-generation Japanese Americans born in the United States (Nisei), and their third-generation progeny (Sansei) (36-37). The government deemed over 110,000 people of Japanese ancestry as "potentially disloyal" and ordered them to leave their homes, jobs, and communities (36). The state then relocated them to isolated internment camps in desert and swamp areas, imprisoning the individuals behind barbed wire defended by armed guards for an average of two to four years (36). The camps existed in the states of Arizona, Arkansas, California, Colorado, Idaho, Utah, Wyoming, and the territory of

Hawaii ("Internment Camps"; "Executive Order 9066"). Government officials remained

particularly concerned about the large community of Japanese ancestry in Hawaii[2], as

they made up about 37% of the island's population (around 158,000 people, including

some 37,000 non-citizens) (Scheiber et al. 2-3). The government viewed them as a

potential security threat due to their potential for sabotage, espionage, and undermining

defense in the event of a Japanese invasion (3). Unlike on the mainland, where the

government implemented a policy of mass removal and internment, the army in Hawaii

only made selective arrests and internments totaling around 2,000 people (Hinnershitz;

Scheiber et al. 3).

While the internment appears reactionary and responsive to the events of Pearl

Harbor, General George S. Patton Jr., President Franklin D. Roosevelt, and Lt. Col.

George W. Bicknell each secretly created internment plans before the attack on Pearl

Harbor occurred (Okawa 52-53). Patton, Roosevelt, and Bicknell each drafted lists of

Japanese Americans living in Hawaii that the military would apprehend and imprison if

the United States went to war with Japan. While serving as chief of U.S. Army

Intelligence in Hawaii, Patton created his "secret plan" to detain Japanese Americans

and aliens — whom he called "Orange"[3] — entitled A General Staff Study. Plan: Seizure

of Orange Nationals between 1935 and 1937 (Okawa 52; Slackman 5). In 1936,

President Roosevelt commanded the navy to identify every person of Japanese descent

on the Island of Oahu and place them in concentration camps if war ensued (Okawa

53). While Patton's plan did not become operational, Bicknell, along with his staff,

assembled a similar list of Japanese Americans residing in Hawaii — including

community leaders, teachers, and religious pastors — in 1941 called the

"Memorandum: Seizure and Detention Plan (Japanese)," which did become operative (53). These three proposals seemed to operate based on doubting the loyalty of Japanese American citizens without proper evidence of disloyalty. As a result, the government violated the ideal of "innocent until proven guilty" by incarcerating the Issei, Nisei, and Sansei under the suspicion that some may be spies for Japan. However, the government did not have substantial evidence of betrayal from the internees and instead predetermined whom they wanted to detain primarily based on ethnic background.

MARTIAL LAW ON THE HAWAIIAN ISLANDS

On December 7, 1941, just hours after the attack on Pearl Harbor, the governor of the territory of Hawaii, Joseph Poindexter, declared martial law under the authority of Section 67 of the Organic Act, suspended the writ of habeas corpus, and placed the entire population of the islands under military control (Beyer 60; Scheiber et al. 1). President Franklin D. Roosevelt approved of Poindexter's action, which led to the implementation of Provost Courts and Military Commission to replace the civil courts (Beyer 60). Lieutenant General Walter C. Short, Commanding General of the Hawaiian Department, assumed the position of military governor and issued a proclamation regulating civilian life through decrees given by him and his successors as general orders (Rankin 213). The government formally established the Office of the Military Governor to oversee all civilian government operations and appointed Lieutenant General Thomas Green, the Hawaiian Department Judge Advocate, as "executive" with

discretion over nearly all aspects of government operations, even policy implementation

concerning those of Japanese heritage (Beyer 60; Scheiber et al. 1). Green played a

crucial role in negotiating between military and civilian authorities during the period of

martial law (Beyer 60). He announced several General Orders at the start of martial law,

including the appointment of an Advisory Committee consisting of military and civilian

authorities, the closing of saloons and prohibition of the sale of liquor, the appointment

of a Military Commissioner with the power to try more severe cases of crime, the

temporary closing of schools, the implementation of a rationing system for gasoline, the

regulation of the sale of radio sets and photographic equipment, and the censorship of

the press and radio, including the prohibition of foreign language newspapers or radio

broadcasts (Beyer 60).

Two articles, both published in 1942, discuss the legality of enacting martial law

in Hawaii. Garner Anthony, the author of "Martial Law in Hawaii," argues that the

implementation of martial law in Hawaii offers legality issues, and the term "martial law"

itself has caused confusion and the government should not use it in future legislation

(371, 389). For military commanders, it means having complete control over a

community (389). However, for most American lawyers, it means that the military

commander has extra powers within the framework of existing laws and constitutional

limitations, which the courts can review once the nation reaches peace (389). The

notion that a declaration of martial law cancels or suspends all existing laws remains

incorrect (389). Anthony asserts that the government needs legislation to provide a

clear legal basis for the actions of the military commander (389-390). When drafting this

legislation, the following factors should be considered: granting the military commander

necessary powers for the successful conduct of the war, allowing civilians to handle specific tasks related to the war and civil life in combat areas to free up military personnel for combat, and preserving individual liberties as much as possible as to not fall into the framework of tyrannical rule that the nation opposes (390). Anthony's view on martial law aims to balance the best opportunity for the success of the military and the autonomy of the civilians living in areas of war. He remains concerned that an oppressive military rule that suspends the typical constitutional rights of the citizenry will lead to a form of authoritarian rule. Instead, he claims a system that uses the population of local residents to assist in the war effort by taking on tasks otherwise carried out by military personnel under martial law frees up military personnel to focus on strategy and combat. The collaboration between the citizens and the military creates a situation that remains advantageous to both parties. However, Anthony did not believe the enactment of martial law held to the ideals of liberty for the citizens of Hawaii.

In a 1942 article responding to Garner Anthony written by Archibald King called "The Legality of Martial Law," the author infers that Anthony doubts the legality of martial law in Hawaii (599). However, King refutes this notion of doubtful legality by declaring that the suspension of the writ of habeas corpus and the authorization of martial law in Hawaii remains legal under section 67 of the Organic Act (632), which approves of these measures in times of invasion or the threat of "imminent danger," among other cases (Organic Act). King appears more focused on the existence of legal justification for martial law, while Anthony concentrates more on the livelihood of the citizens. Even if martial law remained legal, that did not mean that all inhabitants of Hawaii obtained proper protection and fair treatment under military rule.

In their article entitled "Hawaii's Kibei Under Martial Law: A hidden Chapter in the History of the World War II Internments," Scheiber et al. claim that assessing the loyalty of the Japanese to Americans on the Hawaiian Islands remained of paramount importance to the Office of Military Government since they decided, due to the vast population of Japanese living in Hawaii, that internment on the islands would need to be selective (40). The officials involved in the detention of Nikkei[4] individuals during the war tried to create policies that would consider the specific characteristics of each subgroup (41). As a predominantly Caucasian administration without expertise in Japanese culture, they developed a detailed and logical template for profiling based on their experience in questioning Nikkei individuals taken into custody during the initial weeks of the war, from December 1941 to early 1942 (41).

During the first twelve months of the war, naval intelligence officers used the following criteria for analyzing the loyalty of the Japanese during interrogations: family relationships; the amount of time they spent in Japan; education (with Japanese schooling as a point of investigation); citizenship[5]; registration of subject's offspring with the consul general; religion; and membership and level of active involvement with cultural, sports, or other organization; and their attitude toward the emperor of Japan (42-44). In the navy document, the tone remains cautionary and reasonable, which Scheiber et al. point out as notable for two reasons (44). Firstly, the authors advise intelligence personnel to be fair and objective when considering the background and

beliefs of individuals being investigated or questioned (44). Secondly, the text suggests

or states directly that the actual practice had not followed these standards and that

serious mistakes had occurred, leading to severe injustices toward individuals due to

misjudgments and unfairness (44). The text suggests that actual interrogation

procedures did not always follow these standards and that severe errors of judgment

occurred because of a discrepancy between the recommendations made by the authors

and the actions taken by intelligence personnel, resulting in significant and harmful

injustices towards individuals. The document's authors may have shared these

interrogation shortcomings to correct or prevent further mistakes by warning intelligence

personnel of the importance of considering an individual's background and beliefs in a

fair and unbiased manner to avoid making serious mistakes or causing injustices.

However, these warnings remained unheeded.

Several months after publishing the first document on interrogation protocol and

criteria for evaluating factors related to loyalty, the Navy Intelligence Office in Hawaii

released a new manual with a much harsher approach (44). The new manual explicitly

revoked the previous document and instead emphasized the idea that interrogators

should dismiss the positive indicators of loyalty associated with a suspect (44). The

earlier document cautioned against making assumptions too quickly and unjustly.

However, the new manual presented its recommendations based on a racial and

cultural stereotype of Japanese people, suggesting that Kibei[6] suspects would likely be

disloyal to the United States and a national security threat (44). While the new manual

included a passage from the previous memorandum stating that no such thing exists as

a "typical Kibei" or "typical American," the document's overall message went against the

idea of avoiding stereotyping (45). The manual includes lengthy quotes from a 1907 book called Japan: An Attempt at Interpretation by Lafcadio Hearn, an Irish-American writer and ethnographer, which the manual presents as an authority on Japanese social structure and psychology (45). The manual cites Hearn's views that the exceptional communal organization of the Japanese remains the most substantial evidence of their innate lack of suitability for a form of democratic government (45). The manual focuses explicitly on Kibei, Japanese who spent three or more years in Japan after their twelfth birthday, stating that they generally display more pro-Japanese sentiment than other Nisei, and the Japanese community itself considers them the most dangerous group among them (45). It also asserts that the District Intelligence Office of the navy views Kibei with long periods of residence in Japan as a threat to the internal security of the United States due to their education and exposure to Japanese nationalism (45-46). The manual suggests that interrogators should use factors such as family ties, extended periods of residence, educational experience in Japan, and other aspects of their former life in Japan as evidence of disloyalty (46). It goes on to say that interrogators ought to carefully consider declarations of loyalty from Japanese individuals to the United States in light of their background and potential motives for assuming the role of innocence (46).

The change in the approach of the Navy Intelligence Office in Hawaii towards interrogating and evaluating suspects, which shifts from cautioning against making hasty and unfair assumptions to emphasizing the dismissal of positive indicators of loyalty and relying on racial and cultural stereotypes, raises concerns about the potential for bias and discrimination in the interrogation and evaluation process. The use

of stereotypes, especially in relation to national security and suspicion of disloyal citizens, can perpetuate harmful and inaccurate beliefs about certain groups and contribute to their marginalization and discrimination.

Additionally, targeting specific groups based on their background and experience suggests that they may be treated unfairly and differently compared to others. This lack of objectivity and fairness in the treatment of suspects can have serious consequences, including the possibility of mistreatment and wrongful accusations. In order to maintain impartiality and fairness in their practices, it remains critical for agencies or organizations involved in evaluating and interrogating individuals to avoid using stereotypes and making assumptions about people based on their race, culture, or other identifying characteristics. While challenging, officials ought to treat all suspects equally and respectfully, regardless of their background or perceived threat level. Failing to do so can lead to biased and discriminatory practices based on stereotypes that damage the credibility and legitimacy of the agency and potentially harm those who are wrongly accused.

The Navy Intelligence Office suspected that the Kibei's loyalty might be divided due to traditional family and national allegiances. The manual outlined a protocol for testing the subjects' willingness to prioritize their loyalty to the United States over their ties to Japan or their families (46). The protocol included asking them if they would be willing to fight against and potentially kill their own family members serving in the Japanese armed forces (46). The manual also warned interrogators that some Kibei, despite their reverence for the Japanese emperor, might give false responses to these loyalty tests in order to avoid being perceived as disloyal and risking punishment (46).

The manual even suggested asking some Kibei If they would broadcast anti-emperor propaganda on the radio with the knowledge that it could put their loved ones in Japan in danger (46). Ultimately, the interrogations put the Kibei in a difficult position, as intelligence officers viewed positive responses to these tests as evidence of cunning or the ability to give the "right" answers to mask their anti-American view (46).

The manual's warning about Kibei possibly providing false answers during loyalty interrogations illustrates such questioning techniques' subjective and untrustworthy nature. Additionally, the use of moral dilemma questioning may be seen as a form of manipulation and exploitation of family ties and emotions, which raises ethical concerns and calls into question the values and priorities of those conducting the interrogations. Rather than seeking objective evidence of loyalty or disloyalty, the interrogators relied on their assumptions and stereotypes and interpreted the Kibeis' responses in a way that fits their biases.

In the article titled "A Psychohistorical Analysis of the Japanese American Internment," in which author Alison Dundes Renteln posits that two racially prejudiced stereotypes against Japanese Americans may have influenced the decision of policymakers to intern them (632). The first stereotype asserts that the Japanese remain incredibly un-American and unassimilable (632). V.S. McClatchy, a prominent member of the Japanese Exclusion League, expressed this stereotype by arguing that Japanese immigrants had no intention of blending into American society and instead sought to establish a permanent presence for the "Yamato race" in the United States (632–633). In 1943, General John L. DeWitt espoused a similar view before the House Naval Affairs Subcommittee on the Japanese American relocation, commenting that "a

Jap's a Jap" and that it remained impossible to determine their loyalty (633). He claimed it remained impossible to "Americanize" Japanese people because their racial identity stood fixed and unchanging (633). General DeWitt, who was an anti-Japanese officer responsible for the Western Defense Command and a strong supporter of the internment of Japanese Americans on the West Coast, also argued that all Kibei remained loyal to Japan (Scheiber et al. 47). DeWitt believed that all Kibei should be interned for the duration of the war, have their U.S. citizenship revoked, and be deported to Japan after the war ended (47).

The belief that loyalty stands on the basis of race seemed to fuel the attitudes of mistrustful prejudice against the Japanese Americans since they belonged as members of an "enemy race." Dundes Renteln highlights the ironic point that stereotypes about the Japanese's incapability of assimilation became promulgated by policies discouraging their ability to assimilate, such as anti-miscegenation laws (laws prohibiting interracial marriage), segregation of schools, and other measures that enforced racial separation (Dundes Renteln 633). Those policies seemed to have limited the opportunities of the Japanese and made it more difficult for them to fully participate and integrate into American society. Assimilating to and adopting a new country's culture requires exposure to the country's people and customs. The separation likely influenced most Americans to view the Japanese as strange and unfamiliar, possibly contributing to an easier acceptance of the moral decision of internment.

The second stereotype declares that the Japanese remain exceptionally sexually aggressive (632), and perhaps a more controversial analysis from Dundes Renteln

accompanies it. According to Dundes Renteln, many Caucasians have historically been concerned about the sexual power and ability of male members of minority groups (634-636). The hypersexual stereotype has not only been applied to Japanese Americans but to many other groups as well (634-636). The author argues that the stereotype is rooted in the fear that interactions between white women and men of other races will lead to sexual contact and compromise the purity of white people (634-636). The authors continue to communicate that this stereotype of sexual aggressiveness played a role in the evacuation of Japanese Americans, as it contributed to the belief that they posed a threat to white women and the supposed purity of the Anglo-American population (634-636). Further research is required to fully examine the history and validity of this argument.

The sexually aggressive stereotype persisted as a theme in fear-inducing newspaper editorials, films depicting Japanese men desiring white women violently, and comic strips portraying the Japanese with provocative imagery (636-638). One of the most frequently used caricatures of Japanese people by Westerners in literature and cartoons remained the monkey or ape (Dower 84). Dundes Renteln contends that many people associate the monkey and ape symbol with lust in Christian iconography, which she believes may explain why it became particularly prominent in American culture (Dundes Renteln 638). This stereotype depicts the Japanese people as hypersexual primitive savage animals, and cartoonists may have, unconsciously or consciously, used the image to further the negative perception of the Japanese as inferior and un-human. The animal symbolism degrades the Japanese and suggests that they remain lower on the social totem pole than Americans based on their ethnicity. The

dehumanization of the Japanese may have also contributed to the acceptance of the internment with the justification that "wild animals" must be contained to keep human beings safe.

The internment of Japanese Americans in Hawaii during World War II proved a tragic event that serves as a poignant reminder of the dangers of racial prejudice and the need to defend American citizens from discriminatory action as effectively as possible. The internment saw thousands of innocent American residents rounded up and imprisoned by the government — partly motivated by fear and racial and war-related prejudice — due to their Japanese ancestry without any evidence of wrongdoing or intention to harm the country. The internment of Japanese Americans serves as a cautionary tale for future generations, reminding us of the importance of empathy and the need to balance caution during times of war with the avoidance of mistreating or blaming others without evidence of their offense.

However, the internment of Japanese Americans does not stand as an isolated incident. Throughout history, numerous instances of prejudice and discrimination against minority groups, particularly during times of conflict, have occurred. For example, the 9/11 attacks prompted widespread fear and suspicion of Muslims and those perceived as being of Middle Eastern descent, leading to many cases of discrimination and mistreatment. Both events demonstrate the importance of examining and learning from our past mistakes in order to create a more just and compassionate

society. In conclusion, the internment of Japanese Americans in Hawaii serves as a reminder of the dangers of racial prejudice and the need to protect American citizens from discriminatory action. By examining the internment and its consequences, we can work towards a more empathetic and understanding society where individuals strive to treat each other with dignity and respect, regardless of race or ethnicity.

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<center>Notes</center>

[1] The unification of the islands and centralization of political authority exposed Hawaiians to new diseases to which they were not immune (La Croix 11).

[2] The demand for labor in the sugar plantations contributed to the high percentage of individuals of Japanese heritage in Hawaii.

[3] Before World War II, United States military planners used the term "Orange" to refer to Japan (Slackman 5)

[4] "Nikkei" is a term used to describe people of Japanese descent who live outside of Japan. This includes people who are first-generation immigrants from Japan (called "Issei") as well as their children (called "Nisei") and grandchildren (called "Sansei") (Scheiber et al. 3).

[5] The Naturalization Act of 1906 stipulated that only people who were "free white persons" or "persons of African nativity or persons of African descent" were eligible for naturalization ("Takao Ozawa"). Therefore, Asian immigrants could not become naturalized citizens at that time.

[6] According to the Merriam-Webster dictionary, Kibei refers to "a son or daughter of issei parents who is born in America and especially in the U.S. and educated largely in Japan" ("Kibei").

International Studies

Julianne Barros

"Brazil, an International Symbol: A Model for Democratic Corruption"

Mentored by Nathan Zook
Montgomery College

"Written in clear, elegant prose, this paper advances an original argument about corruption and rests on a solid foundation of scholarly research. In her ability to present and synthesize information coherently, the author shows considerable promise as a social scientist."

Dr. Bruce Whitehouse
Associate Professor of Anthropology
Lehigh University

Brazil, an International Symbol: A Model for Democratic Corruption

With over two hundred million inhabitants, Brazil is a nation with a rich history and an incredible culture. From the lush biodiversity to the vibrant Brazilian people, the South American country remains a unique region in the global community. First gaining its independence from Portugal in 1822, Brazil has undergone various forms of government before transitioning into a federal republic in 1988. While Brazil has stood as a prominent figure in the international sphere, its position as a rising power has remained steadfast, despite its efforts to become a global power. Many argue that its rampant corruption scandals and large political crises have prevented Brazil from achieving the international influence it is capable of. What has allowed corruption to be prevalent in democratic nations such as Brazil? Who and what plays a role in allowing corruption to remain persistent? How does political corruption impact the lives of the general public of Brazil? And what, if anything, can be done to solve this issue?

Before looking into Brazil, it is first essential to define what corruption is. Corruption takes different shapes and forms, from small-scale misconduct to wide-spread governmental crime. According to the World Bank, the basic definition of corruption is the abuse of public office for private gain (World Bank). However, this fails to mention the private sector. Francis Fukuyama mentions this fact, where he states, "This definition is a useful starting point; under it, corruption is a characteristic primarily of governments and not… of businesses or private organizations" (Fukuyama). Corruption is possible within private organizations and can have lasting impacts on the

economies of countries dependent on the free market.[1] Not only can state and private

organizations be corrupt separately, but it can be detrimental to a country when they are

cohorts in corruption, as will be shown in the case of Petrobras and Odebrecht in

Brazil.

Multiple forms of corruption exist, some more prevalent in some democracies

than in others. The most common in Brazil is bribery, also known as kickbacks.[2] While

this can be motivated by an individual's personal greed for wealth, it can also be to

influence groups of people. These kickbacks are often a result of patronage and

clientelism interwoven into a nation's political system. After studying Brazil's case,

evidence of clientelism, which involves larger-scale exchanges of favors between

patrons and clients and a hierarchy of intermediaries, will be a leading concept within

corrupt transactions in the nation (Fukuyama).

Brazil's democratic period began with Fernando Collor de Mello[3], the first

president following Brazil's 21-year military dictatorship.[4] What seemed like a fresh start

for Brazil quickly turned sour. Concrete evidence was found that Collor and his

associates had circulated around 2 billion dollars in kickbacks. Indications of clientelism

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[1]As the UNODC explains, "Private corruption affects the entire supply chain, as it distorts markets, undermines competition, and increases costs to firms. It prevents a fair and efficient private sector, reduces the quality of products and services, and leads to missed business opportunities" (Kkienerm). [2]According to Cornell Law School, kickbacks "refer to a misappropriation of funds that enriches a person of power or influence who uses the power or influence to make a different individual, organization, or company richer" ("Kickbacks").

[3]Fernando Collor de Mello was the 32nd president of Brazil from 1990-1992. He was the first democratically elected president.

[4]In 1964, a coup d'etat resulted in the removal of the 24th president of Brazil, João Goulart. Viewed as a weak and indecisive leader, Goulart was accused of beginning a path to a "communist revolution" by many civil-military coalitions in the Brazilian Congress (Napolitano). Over the next twenty-one years of a military-controlled government, media and art against the regime were strictly censored. Additionally, repression of political crimes was conducted, which "involved kidnapping militants, interrogating them under systematic torture, and executing them in extrajudicial faction" (Napolitano). The dictatorship lasted until 1985.

existed within his administration, in efforts to garner support for his political party in Congress. Now, pork-barrel politics appeared to take a stronger hold in this new democracy. Collor, for example, only held the presidency for two years before resigning and being impeached by the Brazilian Senate. Brazil had just broken away from dictatorship to become Latin America's largest democracy. How had institutional corruption seeped so quickly into such a promising nation?

ROLE OF CORPORATIONS

For over sixty years, the Brazilian oil company Petrobras remained an essential asset to the country's economy. The state-owned-enterprise (SOE) became an international symbol for state-controlled companies. Founded in 1953, Petrobras quickly grew to become one of the largest petroleum companies in the world. Its establishment came in response to Brazil's lack of production in oil, yet its extensive consumption of it (Bucheli). The development of such an immense oil corporation brought Brazil to the forefront of the global market. Brazil also acknowledged their poorly organized and financed private sector, which seemed inadequate to handle oil exploration (Hira 250). Petrobras became an integral facet of Brazilian industrialization.

Many viewed Petrobras as a new beginning to turn away from privatization. It demonstrated success of "state capitalism," an economic model that author Anil Hira suggests could be superior to market-based systems. This new wave was reaching Latin America, according to a bold statement stating that, "Petrobras is a perfect example of this new form of ownership and provides the outlines for what could be accomplished in Latin America by following its lead" (Hira 249). Petrobras had been recognized as an ideal mixture of private and public ownership, creating great benefits

for the nation's development goals. Petrobras assisted Brazil in reaching the competitive global market, as well as providing jobs to thousands of Brazilians.

It also was used by politicians and executives to embezzle taxpayer dollars into political party support and foreign bank accounts. In March 2014, Operation Car Wash, a federal police investigation, uncovered what would be one of the largest corruption scandals in history. Named *petrolão*, the scandal involved hundreds of Brazilian politicians, as well as many powerful executives.[5] The scope of Operation Car Wash reached unprecedented levels with over 280 convictions and around R$6.2 billion[6] total misappropriated funds.

A cartel was discovered amongst the contracting companies, politicians, and Petrobras. It was a conjoined effort to make individual profit, and to fund election campaigns. According to Sérgio Moro,[7] "every contract Petrobras signed with the major Brazilian construction companies included kickbacks of 1 or 2 percent of the total value of the contract to the Petrobras officials who approved it" (Moro 160). This left room for bribes for both the contracting companies and Petrobras executives. However, this was not solely between the companies and Petrobras. According to criminal testimony, "Petrobras officials had received bribes and had worked with intermediaries and politicians from other parties in the governing coalition, such as PT and the PMDB" (Moro 160). It was a mechanism, each party relying on the other in order to achieve the

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[5]According to the Journal of Corporate and Financial Law, "The scandal led to the imprisonment of dozens of high-executives of Latin America's most prestigious corporations, and the fall from grace of several former and sitting presidents" (El-Hage).

[6]Equivalent to USD$2.5 billion.

[7]The Brazilian investigative judge in whose court most of Operation Car Wash was tried.

most kickbacks. Petrobras's image began to crumble under Operation Car Wash's investigation, as did the construction companies who formed the cartel.

One of the largest contracting companies involved, Odebrecht, ran its own corruption scheme within the Petrobras cartel. Like Petrobras, Odebrecht held high corporate rankings throughout the globe.[8] Despite this, Odebrecht paid bribes all throughout the world, making it one of the largest international bribery scandals. The Division of Structured Operations (DSO) in Odebrecht controlled all the ins-and-outs of the bribery scheme. Per testimony of Marcelo Odebrecht, the then C.E.O. of Odebrecht, "the DSO specialized in buying influence through legal and illegal contributions to political campaigns and also in paying bribes to public officials and politicians… Larger bribes were vetted by an executive reporting directly to the Odebrecht chief executive officer who often made the final decision" (Campos 172). Odebrecht made great efforts to make sure their scheme ran smoothly. It did, from 2001 to 2016, before it ended with Marcelo Odebrecht's arrest.

But what did Odebrecht get out of delivering immense bribes to its employees, other foreign companies, and politicians? *Quid pro quos* played an enormous role in Odebrecht's reasoning in executing the grand scheme. Bribing facilitated Odebrecht in completing its production goals. As Nicolás Campos analyzes in his article, "Odebrecht bribed to tailor auctions in its favor and to obtain favorable terms when renegotiating the contract after the projects were awarded" (Campos 177). Odebrecht, while one of the

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[8]According to Nicolás Campos, "between 2005 and 2009, … Odebrecht had become Latin America's largest engineering and construction company and ranked 18th worldwide among international contractors" (Campos). However, its downfall came with Operation Car Wash's discoveries.

largest companies involved in the *petrolão* scandal, was solely one of eighteen companies that embezzled tax-payer dollars from Petrobras.

Along with executives playing a role in funneling bribes out of Petrobras, so would presidents and politicians. It was known to the Brazilian public that their government and politicians had high levels of corruption. But now, public disarray had broken out when Operation Car Wash discovered Worker's Party (PT) involvement in the *petrolão* scandal. In the early 2000s, the relatively new PT had become one of the most popular political parties in Brazil. In 2003, when President Lula da Silva took office as PT's most charismatic political leader, hefty promises were made to the Brazilian people. Structured with policies of public welfare, Lula began his presidency with *Bolsa Familia*, an "ambitious programme intended to bring regular supplies of food and cash aid to Brazil's estimated 44 million living below the official poverty line" (Hall). With promises to solve issues such as poverty and inequality PT became the new hope for Brazil.

This became evident through the Lula administration budgetary spending. According to Anthony Hall, he states, "*Bolsa Familia* grew from 23 percent of the social assistance budget (R$2.4 billion) ... to 36 percent (R$5.8 billion) under Lula in 2004" (Hall). These numbers were reflected throughout the nation, whereby the end of 2003, "*Bolsa Familia* had been implemented in almost all of the country's 5,561 municipalities and had distributed almost US$500 million in grants to over five million families with 8.6

million children" (Hall). In addition to impacting many families, the bold government program brought new horizons towards the commercial business as well.[9]

Political support for Lula was also reflected through his *Bolsa Familia* policies. His highest concentration of supporters came from northeastern Brazil, one of the poorest regions in the nation. In response, three-fourths of *Bolsa Familia's* aid was fixated in that area. According to Hall, "Support for Lula [had] been substantially higher amongst beneficiaries than amongst those not taking part in the programme" (Hall). Lula remained PT's most popular candidate, eventually hand picking his successor, Dilma Rousseff, when his two terms were over. She had been Petrobras's chairwoman from 2003 to 2010, until she became president in 2011. It would be during her second term when the *petrolão* scandal would come to light.

This would be disastrous for Rousseff and the PT party. Evidence of systemic corruption stunned Brazilians, sparking protests across the nation. One of the greatest shocks was Lula's involvement in the scandal. The allegations emerged as Brazil was preparing to host the World Cup.[10] In light of the *petrolão* scandal, with millions of people already outraged with what they held was irresponsible government spending of the World Cup, Brazilians took to the streets. Enraged, the people looked towards their president–not for solace–but as a transgressor.[11] Operation Car Wash was unable to

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[9]Following the execution of *Bolsa Familia*, "appeals were made to major companies such as Ford and Unilever, as well as to supermarket chains, for contributions towards Fome Zero that would signify a new sense of corporate social responsibility and alliance between public and private sectors" (Hall). The Lula administration sparked stronger sense of partnership between public and private corporation, gaining praise from international organizations such as the World Bank.

[10]Since 2007, when Brazil was given the bid, it was estimated that the government had invested about $11.7 billion dollars on the event. This was more than three times the cost initially projected and the most expensive World Cup ever (Antunes).

[11]Over the next year, Dilma Rousseff's approval rating would plummet, becoming Brazil's least popular president since the end of the military dictatorship. In the summer of 2015, her approval rating was at a mere 8%, and two-thirds of the nation wanted to see her impeached (AFP).

find concrete evidence that Rousseff had received any bribes for her personal benefit. However, Rousseff had been the chair of Petrobras since 2003, when the Lula administration came into office. There was evidence that she had been aware of the happenings of the cartel but did nothing to stop the scheme.

In Section III, Article 86, Paragraph 4 of the 1988 Brazilian constitution, it states, "During his term in office, the president of the Republic may not be held liable to acts outside the performance of his functions" (Brasil). According to Alexandra Rattinger, the judges of the Supreme Federal Court interpreted this as "the position that a sitting president could not be charged with crimes committed before her presidency…" (Rattigner). Based on this ruling, Congress could only attempt her impeachment on budgetary charges, rather than the evidence found on Operation Car Wash. While this was a blow to prosecutors, they went on with the impeachment trial, on charges for misappropriating government funds to aid her reelection campaign. Rousseff did not deny that this had occurred, however claimed that she went past Congress to also pass budget laws increasing the amount of social welfare given to the public.[12] Nonetheless, "On August 31, 2016, the Senate, by a margin of 61 to 20, voted to convict Rousseff…" (Rattinger). This seemed like the beginning of a new era in the nation, where high-ranking politicians would finally be held accountable for wrongdoing.

FORM OF GOVERNMENT AND CONSTITUTION

Operation Car Wash exposed the lack of transparency and accountability that existed within the Brazilian government. According to Sérgio Moro, one of the lead investigative judges on Operation Car Wash, highlighted the fact that traditionally, Brazil

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[12]She insisted Congress was too slow in enacting laws, and that the budgeting charge was a move by her political enemies to throw her out of office before the election.

rarely enforced the law on powerful politicians and executives. Some of the reasons for this would be the slow nature of Brazil's judicial process. Sérgio Moro states that, "Because of a generous system of appeals and the heavy caseload of Brazilian Superior Courts, powerful defendants used it to manipulate the judicial process, initiating endless appeal proceedings to prevent their cases from ever reaching a conclusion and effectively avoiding accountability" (Moro). Throughout the rest of his article, Moro argues that certain aspects of the Brazilian constitution do not allow for effective accountability of wealthy politicians and businessmen.

Scholars question whether this social inequality and political corruption have been ingrained within the government system of Brazil. Since its independence from Portugal, Brazil has undergone seven different constitutions. While all play an important role in Brazil's rich political history, the 1988 constitution transitioned the country into the largest federative republic in Latin America.[13] The constitutions of 1967 and 1969 ensured military power within Congress and the judicial courts. According to Keith Rosenn, "The 1967 Constitution was designed to lend a greater semblance of legitimacy and permanence to the military regimes running Brazil…The 1969 Constitution sharply reduced the nominal protection previously accorded to individual rights (Rosenn). Power was centralized within these two constitutions, and individual rights of the public was not protected.

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[13]The previous constitutions had been attempts to create a democratic nation, taking reference to the United States Constitution. However, the political structures and its leaders had proven to be weak, and extreme polarization of how the nation should be run existed throughout. In fear of the nation falling to communism, a military coup removed president João Goulart in 1964. This would lead to a military dictatorship for the next 21-years.

Brazil's transition from dictatorship to democracy stands unique amongst other nations that experienced regime change. Unlike other nations, that required civil or world wars to bring about political change, Brazil's own dictatorship decided to progress into democracy.[14] This does not mean that Brazilians did not protest the dictatorship, but that it did not take a civil war induced by the masses to bring about change. Those with political power during the dictatorship were the ones who drafted and structured the 1988 democratic constitution and government. So, if not compelled by a civil war, what incentivized the military to give up their authoritarian power and allow the creation of a democracy? The final president under the military regime, João Figueiredo, encouraged the transition by the enacting an amnesty law that protected military forces that committed human rights violations (Rosenn). This aided the acceptance of democratization by powerful military figures, who feared being held accountable to the laws of the new democracy.

This new government was now heavily dependent on pork-barrel politics. Rosenn states, "Votes of members of Congress in the constituent assembly were purchased, or at least rented, in exchange for pork-barrel programs" (Rosenn). A fragmented political system was created in Congress, following the legalization of all political parties in 1985.[15] However, with so many political parties determined to push their agendas catered to their constituents, Congress becomes very slow, and oftentimes ineffective in passing laws.[16] In order to pass bills, senators and deputies rely on coalitions formed

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[14]Rosenn mentions in his article that, "Unlike transitions from military rule in many countries, the Brazilian transition was not initiated by pressure from civil society. Instead, it was initiated by the military" (Rosenn). [15]As of 2018, there were 35 political parties registered in the federal government, 30 of which had won seats in the lower chamber following the 2018 election ("Brazil: Freedom in the World").

[16]Rosenn highlights that, "Brazil's Congress is a highly political body with a short-term perspective and agenda, elected primarily to represent state and local interests rather than the interests of the nation" (Rosenn).

between parties to keep the lawmaking process running. This opened a door for increased corruption within the newly democratized Congress.

While the transition from military dictatorship to democracy brought about a new era to Brazil, one cannot ignore the flaws that came with the drafting the constitution and government. According to Rattinger, "Drafting issues that are blatantly apparent in the current Constitution have arguably led to an even greater number of corruption scandals than were seen under the military regime" (Rattinger). How did democracy, a form of government made for the people, allow for greater corruption than during a dictatorship? Susan Rose-Ackerman intriguingly stated, "Democracy gives citizens a role in choosing their political leaders. Thus, corrupt elected officials can be voted out of office. But democracy is not necessarily a cure for corruption" (Tanzi).

PUBLIC OPINION

As the seventh most populous nation, Brazilian public servants have the arduous job of providing quality of life to its citizens. Article Five of their constitution states, "All persons are equal before the law, without any distinction whatsoever… being ensured of inviolability of the right to life, to liberty, to equality, to security and to property" (Brasil). Despite this, Brazil has one of the highest levels of income inequality in the world.[17] With this inequality comes extreme levels of polarization amongst political opinions of the Brazilian public. Recently, this polarization has led to one of the closest and most controversial presidential elections in Brazilian history.

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[17]Brazil is ranked 9th in the world with the highest wealth inequality in 2022, with a Gini index of 53.4% ("Wealth Inequality by Country 2023").

Despite a criminal conviction, Lula remained PT's most popular candidate for the 2022 Presidential Election.[18] Why did he remain a popular candidate amongst 50.9% of voters despite corrupt actions? In order to understand this, one must consider both the information and tradeoff hypothesis. The information hypothesis suggests that when voters lack information about corrupt behavior and therefore unknowingly support a corrupt politician (Winters). Because of Brazilian free media, Operation Car Wash was highly publicized throughout the nation and the world. The country was torn, especially because PT was such a popular party amongst the working and lower classes. Lula had statistically lowered the poverty rates in serval regions throughout Brazil. Thus, many Brazilians did not believe the allegations against the former president. This created an epidemic of misinformation, spurred throughout the country about his criminal case.

An example of this was when Lula's sentence was annulled following the Supreme Court's ruling of bias in the case. Many Brazilians believed that this had meant that Lula was acquitted of his crimes, due to a lack of evidence in his case. One illustration of this is within Eder Rodrigues's essay where he states, "A fair criminal proceeding was therefore never performed, as numerous evidence added to the records and acquitting Lula of all charges were disregarded by the first instance judge" (Rodrigues). This, however, is not true.[19] Acquittal and annulment are not

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[18]According to Amelia Cheatham, she states, "The annulments clear the highly popular Lula to seek another presidential term; however, they do not affirm his innocence, and he could face trial in other courts" (Cheatham).

[19]According to reporting by the United Nations, Lula's case had been annulled, not acquitted. To annul means "to state officially that something is not legally recognized" ("Anull").

synonymous; an acquittal suggesting that courts would have found a lack of evidence to prove Lula was guilty of his charges.

Instead, courts found that prosecutors violated due process laws, preventing Lula from receiving a fair trial. Lula's criminal trial was cancelled, removing his conviction and sentence from his record. This does not suggest his innocence, because he was never retried in order to receive an impartial trial. The United Nations states that they, "Urged the Brazilian Government, to ensure that any further criminal proceedings against Lula, comply with due process guarantees and to prevent similar violations in the future" ("Lula Trial in Brazil Violated"). Misunderstanding about Lula's criminal case demonstrates the information hypothesis within public opinion in Brazil. Lula's case was dropped, not because he was innocent of his charges, but because of a technicality in his trial. He was never put to trial again.

As demonstrated, many people do not know the difference between acquittal and annulment, displaying the theory of rational ignorance within the general Brazilian public.[20] According to the World Bank, 60.5 million Brazilians are recognized as living in poverty (Ibarra). And unfortunately, there is also a correlation between corruption levels of a nation with its rates in poverty. In Denilson Silva's article, he explains, "Corruption is a cause of poverty and a barrier to its eradication… In the public sector… corruption discourages growth and deepens poverty, weakening institutions" (Silva). It is possible that many Brazilian voters are not aware of the relationship of between systematic corruption and poverty because the lack of adequate education is preventing them from knowing. This will impact how they vote in elections.

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[20]The cost of learning a piece of information exceeds the possible benefit that piece of information could provide.

However, there are many people that are aware of this connection, and of the evidence found of many corrupt politicians within the government system. This is tradeoff hypothesis, where voters knowingly support a corrupt politician because of their performance in other areas (Winters). The Lula administration brought visible financial relief to several regions throughout Brazil, which was reflected as political support in the 2022 presidential election. Matthew Winters elaborates, stating "that citizens overlook corruption when politicians deliver broad public benefits. The contours of a number of presidential corruption scandals in Latin America seem consistent with the logic behind this hypothesis" (Winters). Thus, many Brazilians have become tolerant of the systematic corruption that takes place within their government, as long as it then provides the social welfare programs they need. This explains why President Fernando Collor quickly faced impeachment in 1992, while President Lula relishes in high public support today. While both were marked by corruption scandals, Collor failed to provide economic stability, but Lula expanded his anti-poverty program *Bolsa Familia*.

While half of the Brazilian population may have developed a tolerance for systemic corruption, half have developed a tolerance for military intervention, contributing to the unprecedented polarization that exists in Brazil today. According to Matthew Stephenson, he states that there had been an "increase in the appeal of authoritarian or quasi-authoritarian top-down solutions, and of centralizing power in charismatic leaders" (Stephenson). This has resulted in countless protests since the exposure of Operation Car Wash, and an intolerance for the corrupt actions of many of the current political parties. Fear of persistent corruption scandals have led to calling on the military to convey a coup similar to that in 1964. These two polar extremes in public

opinion, tolerance in systematic corruption and tolerance in military intervention, detrimentally impact the integrity of a democracy.

A MODEL FOR DEMOCRATIC CORRUPTION

The relationship between businesses and politicians, flaws in the constitution and the government, and public opinion have encouraged a sub-concept of the iron triangle to take root within Brazil. The "corruption trap" is a theory described "as an equilibrium arising from the inability—and unwillingness—of key stakeholders to coordinate on actions that would reduce corruption" (Niczyporuk). This theory helps clarify the reasons for why political corruption can remain prevalent in democratic nations. Corruption is self-reinforcing. When an incentive for individuals to participate in corruption, more corruption will take place. For businesses, the ability to illicitly obtain overpriced contracts for services and preserve political involvement is incentive. For politicians, the ability to create coalitions, fund political parties, and maintain political power is incentive. For the public, receiving welfare benefits is incentive to vote for corrupt politicians.

An economic recession only occurred following the outbreak of the *petrolão* scandal, despite the corruption cartel existing prior to media outlets reporting on the case. The Lula and Rousseff administrations saw increasing economic stability compared to previous administrations, even though the largest corruption scandal in Latin American history occurred during their terms in office. Some scholars argue that corruption may be effective against government-imposed restrictions that can interfere with public investment and growth. This is similar to Rousseff's defense of bypassing Congress budgetary laws to provide quicker welfare relief during her impeachment trial. However, Vito Tanzi counters this argument by highlighting that governments are not

born with restrictions, but are created with restrictions.[21] When conducting research with this in mind, evidence can expose fundamental flaws imbedded within democratic institutions.

Two determinants in the mechanism of corruption are executives and politicians and the form of government and constitution. However, my model includes a third element: opinions of the public. While the general public are unable to make lawmaking decisions, they are able to vote politicians in and out of office, a right unique to those who live in democratic nations. The public's opinion regarding politics is crucial to how the affairs of a nation are done, despite the system being built against the people and for the elite. Many acknowledge this and continue their civic duty, even with little hope of genuine change from their public leaders. In the case of Brazil, the citizen's extreme opinions fall within what they already know: tolerance for corruption because it has been rooted in the system since the first democratic president, or tolerance for military intervention, since the last one provided less systemic corruption and more economic stability.

These three components, 1) the relationship between business executives and politicians, 2) the form of government and constitution, and 3) the opinion of the public, form a mechanism which allows political corruption to remain prevalent in democratic nations. Each need the other to co-exist, however it is the wealthy and elite who benefit off this model of corruption; it only allows the well-positioned individuals to take advantage of government activities at the cost of the rest of the population (Tanzi). So,

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[21]In his journal article, he articulates that these rules, "are created, and, in fact, they may be intentionally created by public officials, to extract bribes… Furthermore, these rules are often kept intentionally opaque so that more power will remain on the side of those who enforce them" (Tanzi).

the rich will become richer, and the poor will become poorer. When a democratic nation is riddled with systematic corruption, the citizens have no choice but to work within the system, hence development of such polarized and extreme public opinions. The root of corruption in a democracy can be found within the ambiguous wording of its constitution, and the group of people responsible for creating the government. It is then abused by those currently in positions of power, in order to make profit or to maintain a party's dominance. It is then, unfortunately, supported by the public who are exploited by this mechanism, who are unable to change the system that was claimed to be made on their behalf.

All three components are stuck in this "corruption trap;" the wealthy reaping the benefits while the citizens relying on leftovers that are occasionally given back to them. Unless politicians are willing to the first step and begin reforming the state, high levels of corruption in democracies will remain. Vito Tanzi emphasizes that any genuine strategy to reduce systematic corruption will take, "honest and visible commitment by the leadership to the fight against corruption, for which the leadership must show zero tolerance" (Tanzi). This is unlikely to ever occur, especially in democracies as complex as Brazil. With these three factors stuck in a loop, corruption can become so engrained in a democracy that it makes its politics convenient, and the populace permissive of it.

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Literature II

Jacob Nawy
"Coriolanus the Eleutherophobe"

Mentored by Richard Rodriguez
SUNY Westchester Community College

"The central idea in Jacob's paper has a lot of potential: it's original and it's relevant. The observation that Coriolanus's aversion to the Republic and his affinity for authoritarianism are due to his fear of freedom is very insightful. This paper shows Shakespeare's power and relevance, even in our world today."

Col. Tony Zupancic
Academy Professor, Department of English and Philosophy
English Program Director
United States Military Academy West Point

Coriolanus the Eleutherophobe

Eleutherophobia is the fear of freedom. Most of us have been faced with an ultimatum and scared to make a decision for fear of the consequences. Some of us feel this terror so frequently that it can be diagnosed as an anxiety disorder. Shakespeare's *Coriolanus* is quite unpopular amongst critics. I argue this is because it's misunderstood. The thematic core of *Coriolanus* isn't fascism, aristocracy, honor, war, masculinity, femininity, or even the Oedipus complex. Fundamentally, *Coriolanus* is about eleutherophobia. It's common knowledge amongst those who know the plot that Volumnia uses her son, Coriolanus, as a tool to further her own agenda because she lives in a civilization that limits her agency due to her sex. However, the reality is that Coriolanus benefits from this arrangement because doing whatever his mother tells him to lets him evade the responsibility that comes with making his own decisions, and therefore the anxiety accompanying the freedom to choose. It should be noted that the play also explores the idea of eleutherophobia on the societal level through the manifestation of Coriolanus's personal eleutherophobia in his political views.

Caius Martius is a prominent soldier in the Roman military during a period of political transformation. Tarquin, the last Roman ruler, has been overthrown prior to the onset of the narrative. Caius himself fought against Tarquin. Rome's system of governance is now becoming more democratic. In the first act of the play, Caius Martius is granted the name "Coriolanus" as recognition for his military victories in the city of Corioles during the Roman campaign against the Volsces. While his prowess in battle has brought him fame and favor, Coriolanus is a deeply flawed individual. He detests

the plebians and can't stand the idea of a republic. Despite the valor he displayed in combat, the people ultimately turn on Coriolanus because of his authoritarian tendencies. Considering how much Coriolanus despises popular rule, it's ironic that he contributed to the end of Tarquin's reign, and therefore the beginning of republicanism in Rome.

Coriolanus's mother, Volumnia, is pushing him to become the consul. Two tribunes who represent the plebians, Brutus and Sicinius, scheme against Coriolanus because they view his political ascent as a threat to their power. Coriolanus has the support of the nobility, but he must win the votes of the people to be sworn in as the consul. He goes to the marketplace and is able to persuade the populace to vote for him by displaying the wounds he received while fighting on behalf of the state. However, after Coriolanus departs, Brutus and Sicinius convince the plebians that they should deny Coriolanus the consulship by rescinding their votes. Brutus and Sicinius lead the people to march on the capitol. Once they arrive, Brutus and Sicinius enter the building and inform Coriolanus that the plebians have turned on him. Coriolanus is enraged and berates the two tribunes, as well as the senators, for accepting popular rule. Eventually, while Coriolanus is ranting, the tribunes accuse him of treason. A scuffle ensues and Sicinius demands the assistance of the agitated citizens in subduing Coriolanus. When the people come to the aid of the tribunes, Brutus and Sicinius declare that Coriolanus should be sentenced to death. Coriolanus stands ready to fight the masses, but the senators convince him that he should retreat to his home instead.

A trial is held to determine what will happen to Coriolanus. It's decided that he is guilty of attempting to abolish popular rule and establish himself as a tyrant. The punishment for his crimes is exile. Once he is banished, Coriolanus goes to the Volsces and meets with his former rival, Aufidius, the most prominent general in the Volscian military. Coriolanus allies himself with the Volsces so he can get his revenge on Rome. He and Aufidius lead a military campaign and are victorious in their battles through the Roman territory on their way to Rome itself. However, once they reach the walls of Rome, Coriolanus's loved ones come out to parley with him before his siege begins. The only pleas for mercy that get through to Coriolanus are the ones made by his mother, Volumnia. Despite knowing full well that sparing Rome may lead to his downfall, Volumnia sways Coriolanus to show mercy to the people who cast him out. Even though Rome still stands, Coriolanus and Aufidius return to the Volscian city of Antium victorious. Aufidius had grown envious of Coriolanus's exploits and the adulation that the Volsces thrust upon him. It's for this reason that Aufidius and a group of conspirators murder Coriolanus after proclaiming him to be a traitor for his refusal to raze Rome to the ground.

In the *Cambridge Quarterly* article "Coriolanus," an analysis of the Shakespearean tragedy, J. C. F. Littlewood writes:

> [This is] what seems to have become the established or prevailing view of the play: [it's] a masterly performance by the mature craftsman writing easily within his powers and not drawing on the depths within himself: and I want to appeal to the reader to refuse this prevailing judgment, not because the play's success

4

strikes me as rivalling *Macbeth's*, but because, if a successful play is a satisfactory whole, Coriolanus is not a success of *any* order, higher or lower, and because, though it fails to "achieve itself", it was on the way to becoming a more important kind of success than I believe criticism has ever, with one partial exception, begun to realise. […] When Shakespeare got to the last two acts, he forgot what his subject had begun to be and who his hero was. He was for some reason unable or unwilling to complete the potentially great play that was blossoming out in Act III. (339)

While I agree with Littlewood in that I *disagree* with the "prevailing view" that *Coriolanus* is shallow, and appreciate the boldness in asserting that Shakespeare dropped the ball, I believe that just because Littlewood fails to see the value of the last two acts, it doesn't mean that the value isn't there. I'm asserting that despite criticizing critics for overlooking the depth of meaning in the play as a whole, Littlewood is doing exactly what those critics do by specifically overlooking the depth of meaning in the latter portion of the narrative. I'll be examining ignored and underappreciated elements of one of Shakespeare's most ignored and underappreciated plays. The two acts that Littlewood derides are some of the most important parts in Shakespeare's greatest exploration of eleutherophobia, and I intend to prove that to be true.

Volumnia only cares about her son, Coriolanus, insofar as she can twist him to suit her needs. Prior to Coriolanus's return in the beginning of the play, she openly admits to his wife, Virgilia, that she values his military prowess above all else, even his life: "Hear me profess sincerely: had / I a dozen sons, each in my love alike and none

5

less dear / than thine and my good Martius, I had rather had eleven / die nobly for their country than one voluptuously surfeit / out of action" (1.3.19-23). If Volumnia really cared about Coriolanus's well-being, I doubt that she'd wish for him to be injured. When Menenius asks her about the fresh wounds Coriolanus will return with, Volumnia mentions why she's so happy he's been harmed: "I' the shoulder and i' the left arm there will be large / cicatrices to show the people, when he shall stand for his / place" (2.1.117-120). Volumnia is saying that Coriolanus will be able to show his wounds to the plebians to convince them to vote for him to be the consul. Her son isn't even back from the war, and she's already talking about how she'll use him for her own purposes. After Coriolanus does return, Volumnia discusses her ambitions: "I have lived / To see inherited my very wishes / And the building of my fancy: only / There's one thing wanting, which I doubt not but / Our Rome will cast upon thee" (2.1.175-179). Coriolanus replies, "Know, good mother, / I had rather be their servant in my way, / Than sway with them in theirs" (2.1.180-182). Coriolanus is explicitly telling his mother that he has no wish to become the consul. Regardless, he still ends up trying to obtain the position to please her.

Coriolanus was molded by Volumnia, and he doesn't make decisions for himself. It's not that he couldn't choose, it's that he chooses not to choose. Instead of embracing self-determination, the son lets his mother decide what he should do. One could argue that he made his own decision when allying with Aufidius to take revenge on Rome. However, I would argue that Coriolanus was just acting out of habit, and it was Volumnia who ingrained that habit into Coriolanus. His mother always wanted him to be

6

a barbarous warrior. She directly tells her son, "Thou art my warrior; / I holp to frame thee" (5.3.72-73). Volumnia raised Coriolanus callously to make him this way, and in "The Other

Coriolanus," Katherine Stockholder elaborates on how the manner in which she parented succeeded in turning him into such a menace:

> Volumnia as Roman matriarch clearly embodies the values of her country's tradition. She's not lovable, but always admirable, strong, and, unlike Coriolanus, free to use the strength of her personality in whatever way will serve her ends. She passes these values on to Coriolanus, but having denied her own feminine and maternal tenderness she makes him terrified of his own humanity. (235)

Engaging in combat was always what pleased Volumnia, and Coriolanus's denial of his own humanity enabled him to be merciless and victorious on the battlefield. Seeking vengeance through war with Rome was just Coriolanus defaulting to the behavior that historically satisfied his mother's desires.

Towards the end of his life, Coriolanus must decide to either lay siege to Rome or spare the citizens who rejected him. One might say that Coriolanus chose to spare the people, but I see it differently. When faced with such a difficult decision to make, instead of stepping up and taking responsibility, he did what he always does and deferred to Volumnia. While it's true that Coriolanus did default to a violent strategy for revenge when exiled, once his mother is finally in front of him again, he is able to see that vengeful conquest is *not* what she wants out of him this time. She spins a narrative that he can show mercy to Rome and still be honored as a hero amongst the Volsces:

> If it were so that our request did tend / To save the Romans, thereby to destroy / The Volsces whom you serve, you might condemn us, / As poisonous of your honor: no; our suit / Is that you reconcile them: while the Volsces / May say 'This

mercy we have show'd'; the Romans, / 'This we received'; and each in either side /

Give the all-hail to thee and cry 'Be blest / For making up this peace!' (5.3.152-160)

This theory is inevitably proven to be false, but it paints a pretty picture where

Coriolanus's anxiety-inducing ultimatum is negated, and he needs not commit entirely to

Rome nor the Volsces. While providing an example to demonstrate free will in "Sarte on

Freedom and Education," David Detmer happens to perfectly explain the situation

Coriolanus is faced with:

> Suppose that I am trying to decide what to do with my evening tonight, and that I
>
> am greatly attracted to two (and only these two) possibilities, one of which would
>
> require me to travel due east and the other of which would necessitate my traveling
>
> due north. It is highly unlikely that I, having been 'pulled' in both directions, will
>
> compromise by veering off in a northeasterly direction, thus missing out on both
>
> attractive possibilities. Rather, I will simply have to decide between them, utterly
>
> rejecting one and completely choosing the other. (80)

Note how Detmer specifies that it's "highly unlikely" that he'll compromise between the

two mutually exclusive choices when exercising his freedom because the compromise will

end up being worse than if he just picked one or the other. Well, when Coriolanus

compromises between siding with the Romans or siding with the Volsces in an attempt to

negate the ultimatum, as well as his own freedom, Detmer's prediction that the

compromise will end poorly is true. However, Coriolanus himself seems to realize this and

openly admits that he knows Volumnia's hypothetical win-win situation is overly optimistic:

"You have won a happy victory to Rome; / But, for your son—believe it, O believe it! /

Most dangerously you have with him prevail'd, / If not most mortal to him. But, let it come" (5.3.207-210). Despite this, he submits to his mother's will since acknowledging the reality that he can freely choose for himself is too frightening and painful. Seeking reassurance from Aufidius that he truly does have no choice but to obey Volumnia, Coriolanus asks him, "Now, good Aufidius, / Were you in my stead, would you have heard / A mother less? or granted less, Aufidius?" (5.3.212-214).

The truth is that, while Aufidius pales in comparison to Coriolanus in battle, the Volscian far outstrips his Roman counterpart in ambition, and unlike Coriolanus, Aufidius has no master to reign him in. With that in mind, it's quite possible that if Aufidius *was* in Coriolanus's position, he would have sacrificed his family to succeed in his goal of destroying Rome. After all, Aufidius was willing to betray Coriolanus to get what he wanted. Some interlocutors would be quick to point out that Aufidius almost certainly values Coriolanus less than he values his family. I'd remind those individuals that upon laying eyes on Coriolanus when the exile appears at his home, Aufidius tells him, "Know thou first, / I loved the maid I married; never man / Sigh'd truer breath; but that I see thee here, / Thou noble thing! more dances my rapt heart / Than when I first my wedded mistress saw / Bestride my threshold" (4.5.116-121). Aufidius is literally

9

saying that he's more infatuated with Coriolanus than he was with his own wife right after they had been married. Considering he killed the man who moved his heart more than his bride did, I think it's more than fair to say that Aufidius would kill his wife, too.

There is one other character who may be even more likely than Aufidius to make the choice that Coriolanus couldn't bring himself to consider. The one crime that might be

worse than matricide is filicide, and that's a sin Volumnia was happy to commit. If she

could sacrifice her own son like she did, then there is no doubt that she would also

sacrifice the rest of her family. Theoretically, it's possible that Volumnia didn't think

Coriolanus would be killed. However, I contend that it'd be naïve to think that's the case.

Volumnia wasn't stupid enough to believe things were going to turn out well for

Coriolanus. If even he realized what was going to happen, then his mother certainly did,

too. Volumnia could never be as adept a manipulator as she is if she wasn't very

intelligent. Nowhere else in the play is her capacity for manipulation showcased better

than when she prevents Coriolanus's destruction of Rome. It's here when Volumnia

demonstrates most obviously that she's well aware of Coriolanus's dependence on her.

She tells him, "There's no man in the world / More bound to 's mother" (5.3.178-179). In

an effort to guilt him at the beginning of the scene, Volumnia drops to her knees to invert

the dynamic of respect and deference that Coriolanus understands to be natural in a

proper relationship between a mother and son: "I kneel before thee; and unproperly /

Show duty, as mistaken all this while / Between the child and parent" (5.3.62-64).

Volumnia doubles down when she says, "Thou hast never in thy life / Show'd thy dear

mother any courtesy, / When she, poor hen, fond of no second brood, / Has cluck'd thee

to the wars and safely home, / Loaden with honour" (5.3.180-184). This assertion is

blatantly false. Coriolanus has done the exact opposite of what Volumnia claims. The man

has dedicated his entire life to doing what his mother wanted him to. Unsurprisingly, it's

not long after Volumnia leverages that harsh accusation when Coriolanus breaks down

and cries: "O mother, mother! / What have you done? Behold, the heavens do ope, / The

gods look down, and this unnatural scene / They laugh at" (5.3.203-206).

Still, one has to wonder if Volumnia's talent is wasted on Coriolanus since he always seems to end up doing what she wants, or what he thinks she wants, regardless of what she says. For example, Volumnia didn't need to make her son sob to get him to try to win the consulship. All she had to do was tell Coriolanus that she wanted him to do it for her. It's not clear if the cruelty she chooses to speak with in this instance is necessary for her to get her way. What *is* clear is that Volumnia's words are calculated, and she knows what's she doing. When the mother returns home with her daughter-in-law, Virgilia, and her friend, Valeria, after sending her son back to Antium, a senator cries out, "Behold our patroness, the life of Rome! / Call all your tribes together, praise the gods, / And make triumphant fires; strew flowers before them: / Unshout the noise that banish'd Martius, / Repeal him with the welcome of his mother; / Cry 'Welcome, ladies, welcome!'" (5.5.1-6). As the savior of Rome, Volumnia finally receives the adoration, status, and influence that she has always lusted after. She wasn't merely trying to save her life when imploring Coriolanus to spare Rome, she was securing herself the position of power which she's spent her life, and her son's life, striving for.

He was born to serve that purpose, and that purpose was fulfilled in death. In the end, Coriolanus was sacrificed by both Aufidius *and* Volumnia so that they each could occupy prestigious positions within their respective societies.

Throughout the play, Coriolanus has many opportunities to diverge from Volumnia's script, but he would rather aim for a political position he doesn't even want than have to engage in self-determination. It's quite telling that this contempt for self-determination is expressed in his political views as well. When he's ranting at the tribunes

and senators after the plebians express their regret for supporting him, Coriolanus doesn't mince words about his thoughts on republicanism:

> What may be sworn by, both divine and human, / Seal what I end withal! This double worship, / Where one part does disdain with cause, the other / Insult without all reason, where gentry, title, wisdom, / Cannot conclude but by the yea and no / Of general ignorance,—it must omit / Real necessities, and give way the while / To unstable slightness: purpose so barr'd, it follows, / Nothing is done to purpose. Therefore, beseech you,— / You that will be less fearful than discreet, / That love the fundamental part of state / More than you doubt the change on't, that prefer / A noble life before a long, and wish / To jump a body with a dangerous physic / That's sure of death without it, at once pluck out / The multitudinous tongue; let them not lick / The sweet which is their poison: your dishonour / Mangles true judgement and bereaves the state / Of that integrity which should become 't, / Not having the power to do the good it would, / For the ill which doth control 't. (3.1.156-176)

Is it any wonder that Coriolanus loathes popular rule when he can't even stomach the thought of governing himself? He's let his authoritarian mother dominate him his whole life, and now it's the only way he knows how to live. Since Coriolanus depends on an authoritarian figure to command him, it makes sense that he was reluctant to assume that role himself as the consul. Naturally, Coriolanus projects his personal dependence on an authoritarian figure onto society as a whole. He can't function without an authoritarian, so Coriolanus fails to grasp how Rome could function without one as well.

By buying into the idea that a child must always obey its parent, Coriolanus is able to escape the anxiety that comes from taking responsibility for the direction of his life. Unfortunately, his compulsion to avoid the displeasure freedom made him feel ultimately led him to his demise. Perhaps if we can't embrace self-determination ourselves, we'll share the same fate as Coriolanus.

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Psychology I

Sydney Kurtz
"Holistic Approach According to the BioPsychoSocial Model"

Mentored by Peter Marino
Dutchess Community College

"Ms. Kurtz's paper was an extremely well researched literature review regarding the holistic approach to mental health. The essay was exemplary in its discussion of intersectionality and issues pertaining to diversity, equity, and inclusion."

Sabrina Rieder, MA Forensic Psychology
Adjunct Professor of Psychology
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HOLISTIC APPROACH ACCORDING TO THE BIOPSYCHOSOCIAL MODEL

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College March 1, 2023

ABSTRACT

An exploration of the holistic approach and research of newly created models; along with a brief example of historic holistic approaches and their presence and impact on modern techniques. Research into the biopsychosocial model and the importance of intersectionality and looking at the person as a whole. Looking into how problems arise and techniques to recenter the three sections of someone's life: biological, psychological, and sociological. Looking into a population and explaining how modern models of the holistic approach can help heal and resolve their problems. There will also be a discussion on my personal opinions of the strengths and weaknesses of this approach. Lastly, discuss the impacts on the Indigenous population and my approach to how to help possibility in the future within this field of Human Services.

The BioPsychoSocial model was created in 1977 by George Engel and John Romano.

They conceptualized this model at Michigan State University to examine three sections of someone's life: biological, psychological, and sociological. This was created to look at all aspects of someone's life to find a purpose for someone's disease or illness. If a problem arises, the problem is recognized as coming from one or more aspects of the three sections and interfering with the others, recognizing intersectionality in mental illness.

The BioPsychoSocial Model is a type of holistic approach. Historical accounts of the holistic approach can be seen in ancient eastern medicine such as acupuncture, meditation, aromatherapy, and massages. The holistic approach addresses several aspects of someone's life with a treatment that helps center and balance someone's body and mind. Another prime example of holistic practice would be Ayurveda; a type of medicine created in India over three thousand years ago. It uses plant-based medicines to heal the body and mind. One of the most known Ayurveda turmerics has many benefits to the body and mind.

> *Withania somnifera* or the Indian ginseng as an antitumour [sic] agent, and curcumin -- the active ingredient in the spice turmeric -- as an anti-infective, anti-inflammatory [sic] and antidiabetic. Scientists are following intriguing leads that curcumin might have antimalarial activity and inhibit the replication of some viruses. (Padma, 2005)

Healthcare specialists combine natural medicines with body and mind movements like yoga and meditation.

During the Covid-19 pandemic, the Indian government saw the benefits of Ayurvedic practices. So, they promoted a list that can help the country boost its

immunity. The list mentions daily consumption of spices and herbs, practices of yoga, Pranayama, and meditation. There are

possible psychoneuroimmune mechanisms that are connected to the suggested Ayurvedic practices. These mechanisms release neurotransmitters and modulate the monoamine function. As well as lessen the stress response and decrease the symptoms of depression, anxiety, and overall stress in an individual. A good example of an herb is Tumeric. There was a ten-year longitudinal study done that looks at mental illnesses such as depression, obsessive-compulsive disorder, attention-deficit hypersensitivity disorder, etc., and studies the impact of herbal medicine on the individual. They found that there is evidence that *Curcuma longa* (turmeric) helps with depression, as seen in figure 1.

FIGURE 1

Table 1
Content analysis of the Government of India's recommended Ayurvedic practices guidelines.

Intervention	Potential psychoneuroimmune mechanism	Meaning response
Drink warm water throughout the day	–	+, seen as "cleansing the body"
Daily practice of yoga	+, via modulation of stress responses, monoamine function and parasympathetic activity	+, seen as promoting physical fitness
Use of specific spices – turmeric, coriander, cumin, garlic	+, via evidence of monoamine and gamma-amino butyric acid neurotransmission and alleviation of depression in controlled trials	+, seen as an essential part of nutrition and "health promoters"
Take *Chyawanprash* (a traditional Ayurvedic preparation) every morning	+, via evidence of reduction of depression and anxiety in controlled trials	+, seen as "rejuvenating" the body
Drink herbal tea made from *tulsi* (basil), cinnamon, black pepper, ginger, raisins	+, via evidence of reduction in depression, anxiety and stress in controlled trials	+, seen as a specific remedy for cough and respiratory problems
"Golden milk: (warm milk with turmeric) once or twice a day	+, see "Use of specific spices" above	+, the "golden" colour symbolizes health and prosperity
Nasal application – apply sesame oil / coconut oil or *ghee* (clarified butter) twice a day	–	+, seen as a healing substance and a "coolant" for the body
"Oil pulling therapy" – rinsing the mouth with oil for 2–3 min and then spitting it out	–	+, a traditional folk remedy for a variety of ailments
Steam inhalation with mint leaves or caraway seeds	–	+, seen as effective against respiratory problems
Use of clove powder mixed with honey or sugar for throat irritation or cough	–	+, seen as a treatment for throat diseases

Key: +, present; -, absent.

Note. This is a table showing the practices recommended by the Indian government during the Covid-19 Pandemic.

(Rajkumar, Table 1, pp. 2)

TECHNIQUES AND INTERVENTION

In the biopsychosocial model, it is believed that problems arise from one of the sections being out of balance. Biological involves the genetics and physical aspects of someone's life including their neurons, neurological makeup, and neurological function

of the genes whether expressed or not expressed. Lived experiences shape what the person has learned or is learning. The psychological component is the behaviors, patterns, and emotions of someone, how they react to actions of varying difficulty, their ways of behavior and their consistency, and their emotions and attitudes towards their environment and lived experience. The most important and influential appears to be the sociological component consisting of their environment and what makes up their environment and relationships. The busy brain model illustrates how examining certain aspects of someone's life can lead to a deeper understanding of disease or illness. There are three centers in the nervous system: the prefrontal cortex (PFC) [thinking], the limbic system (LS) [beliefs], and the enteric nervous system (ENS) [attitudes]. When there is a sign of

mal-stress or trauma then one of the centers has more power or control than the rest. When the PFC is in control then illnesses or spectrum disorders that are likely to arise are bipolar mania or schizophrenia. Illness that arises when the LS is in control is depressive disorder so seasonal affective disorder or major depressive disorder. When the ENS is in control of illnesses like stress disorders, post-traumatic stress disorder, or general anxiety disorder. All of the illnesses appear to be disease coping mechanisms to not be in the moment but distracted by bodily or external information.

Within the last century, there have been new models to approach a problem holistically, such as the Power Threat Meaning framework (PTM) and the Healing Centered Engagement model (HCE). These techniques change someones coping mechanisms from a bad negative point of view, and review what has happened to the person and how it is a response to their environment. The PTM changes the question from "What's wrong with you?" to "What's happened to you?"; while the HCE changes the question from "What's happened to you?" to "What's right with you?".

There are no specific techniques that will work for all individuals. However, there

is a theme to center the person and realign the imbalance within the three aspects of their lives.

Techniques such as meditation and yoga connect the mind and the body to the moment. Meanwhile, there are techniques such as aromatherapy and guided imagery that combine the mind with the environment to relax the body.

There is such importance for the development of new bottom-up models like the PTM and HCE. An individual exhibiting symptoms is not just a person with an illness but a person whose body is reacting a certain way and observing their lived experiences to find out why.

Healing Centered Engagement explores how systems are impacting someone's illness.

There are four goals in this model. The first goal is that this approach is political. HCE counselors are not looking to just change the client but to change the systems that are impacting the client and their traumas. The second is to restore the client's identity, Ginwright writes "Healing [sic] centered engagement uses culture as a way to ground young people in a solid sense of meaning, self-perception, and purpose" (2018). Creating not just a sense of self in their environment, but a self that is also oriented to their culture and ancestors. Goal number three is embracing the positive and highlighting what an individual has accomplished and in general how they view themselves. It is the opposite of a typical hospital's approach and points out mostly the negative symptoms. Lastly, goal number four is making sure the health providers are taking care of themselves. This model acknowledges that those who are helping need to be healthy to help others. Overall this model has people realize that their identity is more than their trauma (Ginwright 2018).

The Power Threat Meaning framework investigates people's symptoms as threat responses. There are two basics to what makes someone's threat response go off: "I

don't feel safe.", and "I don't feel that I belong." There are powers that can trigger this such as adversities. Adverse Childhood Experiences (ACEs) or varying traumas that affect childhood development. Nadine Burke Harris discusses this in a TED Talk about how there is a direct connection between physical and mental health regarding stress response. During the stress response the heartbeat speeds up, arteries tighten, pupils dilate, breathing way expands, etc. and this is ok when it is needed in a genuine fight or flight situation. But when that stress response is triggered whenever an abusive parent comes home or sees their rapist past them it can be harmful to the person's physical health (Harris, 2018). There can be crucial effects on the neurological development of the child. There are impairments in the Prefrontal Cortex, Hippocampus, and Amygdala, potentially contributing to a regression in the development of emotional regulation, fear response, impulse control, learning, and memory.

Coping mechanisms form for the purpose of adaptation. This can be harmful to the person's physical health, because energy is going towards the mechanisms and not their immune system. The body is adapting to the trauma and responds to the threat by having the energy toward coping mechanisms. A study was done to see the connection between inflammation of the brain and depressive symptoms,

> "...review the evidence that pro-inflammatory cytokines can also trigger the development of depression in vulnerable individuals [sic], and the possible underlying mechanisms.
>
> …these actions of cytokines in the brain might have a role in at least part of the increased prevalence of depression in people with physical illness." (Dantzer, O'Connor, Freund, Johnson, & Kelly, 2008)

There is a connection between depressive symptoms such as slowed thinking, flat mood, delusions, and a change in metabolism. So when the body is unhealthy and the immune system is low then the mind is susceptible to becoming inflamed.

The HCE acknowledges the impact of society on the person. Overall, in the holistic approach, there are no innate capabilities or capacities of the person. The closest thing to this is the familial background and genetic influences and the social standards and stereotypes of what the person is capable of. The rules and boundaries are up to society and what is expected in their culture and environment for them to succeed. An example of this would be a study done on women in STEM. Moé, Hausmann, and Hierstein asked both women and men mathematicians with equivalent education and gave them a test. The result showed that "Men outperformed women, and STEM students outperformed non-STEM in mental rotation, while women outperformed men in verbal fluency. Male STEM students' stronger endorsement of male-favouring[sic] stereotypes might reflect genuine group differences, at least in mental rotation" (2020). Showing that stereotypes impact how people perform no matter how equivalent the education is.

A way to help depressive symptoms for some may be assessing their eating habits. There is a connection between someone's mental stability and their stomach. This is because of the enteric nervous system and the over thirty neurotransmitters that have the same makeup as those located in the brain. Recounting a study on the connection between emotions and lactobacillus which is the bacteria located in yogurt and cheese; Hurley wrote, "Cryan has found that the specific lactobacillus strain he is working with alters the expression of brain-cell receptors for a key neurotransmitter, GABA, and reduces anxious behaviors in mice" (2011). The fact that researchers are finding that one certain bacteria has an impact on emotions is quite significant.

A big part of the holistic method is gathering the story of the person's life, on all three aspects, and establishing a self-care tool kit. There is a technique called emotional hygiene which Guy Winch explained in a TED Talk. He begins by making a point about how children are taught how to take care of their physical health but not their psychological hygiene. He continues about the poor effects of bad emotional hygiene, such as being more vulnerable to stress and anxiety.

He talks about how one of the techniques to have better emotional hygiene is to protect your

self-esteem and treat yourself like you would treat a friend or how a friend treats you. The next is to force yourself to think of something positive and distract yourself from negative thoughts; changing your perception of situations (2014).

In addition, there are more traditional techniques such as meditation or guided imagery that center the mind. Such techniques help create new outlooks and perspectives on how someone views their stress. This is very crucial to someone's health. For example, not being in the moment can cause anxiety or depression. Guided imagery has connections to weight loss and a better immune system. Along with this, there are connections to better blood flow. During the stress response, the heart contracts, and the arteries close up. Being in this stage for an extended period of time, then it can be harmful to someone's health. Kelly McGonigal mentions the importance of perspective on stress and how, if it's perceived as for the better, it can improve an individual's physical health. She also contends that talking and connecting to others socially can physically improve health as well. McGonigal mentions,

> "How you think and how you act can transform your experience of stress. When
> you choose to view your stress response as helpful, you create the biology of
> courage. And when you choose to connect to others under stress, you can create
> resilience." (2013)

As a counselor, it is essential to ensure that when talking to a client the counselor is going deep into their story and building a connection. Guiding clients in establishing a support system and the formation of positive social relationships promotes the expression of genuine joy and trust. So the act of talking to someone else and guiding your mind with images can make someone feel safe and peaceful, reducing their anxiety or depression.

The BioPsychoSocial Model integrates other styles such as psychoanalytic into our understanding of illness in a personalized way. It also surveys several possibilities as to why someone is approaching a situation a certain way or why they are behaving poorly. Having no strict rules or guidelines provides flexibility in interpretation and adaptability.

It is plausible not all individuals agree with the BioPsychoSocial model. Some believe that the only resolution to their problems is a diagnosis or a prescription. The BioPsychoSocial Model explores many other solutions or techniques that make medication a final resort. It can make the relationship very difficult to develop and build if there is no trust or belief in what the counselor is doing. Nonetheless, that does not make it impossible. It may take some time, convincing, and cooperation but the establishment of a working relationship is possible.

Another weakness would be that models such as the PTM framework don't always include the social factors of illness. The HCE centers on the institution's impact as to why someone voluntarily or involuntarily is acting out or feels social pressure, acknowledging there is a political side to the way mental illness may be viewed in society. A good population where HCE would be a good fit is the indigenous population. Social factors of mental illness seem to be prevalent on reservations. It is likely low economic eras that have contributed to a sense of lost connection to their culture. An indigenous trauma victim states,

"You know, when I'm under these circumstances and I don't know where my next

meal is coming from, I don't know how you can help. I don't even know what kind

of help I'm going to need. You know, sometimes it's just talking. Sometimes it's a

need to cry or vent. It depends. I might need a ride, or I might be afraid."

(Bassett, Tsosie, & Nannauck, 2012)

Bassett, Tsosie, and Nannauck found that "Cumulative analyses of indigenous healers'

perspectives on health and wellness in indigenous populations are urgently needed to

address the health disparities in Native populations" (2012). There needs to be a

change in how healing happens within the native population and a change as to why

traumatic injuries and events are occurring. On reservations, there is a large

percentage of drug use. While there are genetic factors for mental illness within a

family; there seems to be much more of an environmental influence overall. For

schizophrenia, Peter Simons found,

"...the statistically significant genetic associations explained a total of 2.28% of

whether a person is diagnosed with schizophrenia. That leaves a solid 97.72% to

be explained by other factors, such as the environment's impact on biology,

emotional trauma, childhood experiences, or family dynamics." (2019)

So there becomes a generation system created for mental illness and drug use

within this community. Along with this, there's a higher risk for ACEs and a shorter

lifespan.

To be most effective, as a counselor with a patient who is from an indigenous

background I would need to: be aware of multiculturalism; utilize techniques to help

ACEs and bring recognition to unknown traumas; use guided imagery; and provide tips

for a better diet and sleep schedule. If the client feels that they need to be healed

spiritually as well make sure to network and refer them to a Native healer from their

background. Ensure that they are connected

culturally and be aware of the systematic influences on both them and their family. Then after this identify the systems affecting them and see what can be done to prevent any future trauma to the population.

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Sociology

Wanjiru Ayatta
"Examination of Infertility Solutions:
Exposing an Imbalance in Global Distribution"

Mentored by Rebecca Eggenschwiler
Montgomery College

"The paper highlights a core principle of sociology, which is the use of statistical analysis to examine a biological phenomenon (infertility) and use this analysis to find possible patterns. Congrats!"

Shaun S. Nanavati
Professor, Neuropsychologist, Clinician,
and Researcher
City University of New York

Infertility causes mental anguish to each person it affects. Whether caused by sexually transmitted diseases or fallopian tube blockages, all forms of infertility penalize women and men. Infertility is a universal problem affecting men and women, but women hold more of the burden for fertility issues. Before the 1800s, infertility was stigmatized and taboo to discuss due to fear and shame. Women's infertility was considered the ultimate punishment by the gods because it denied reproduction for those affected[1].

In the 1900s, scientists began to break new ground regarding infertility. With the help of laboratory rabbits, a potential solution to infertility emerged called IVF: In Vitro Fertilization. IVF is a procedure under the Assistive Reproductive Technology (ART) umbrella. The Centers for Disease Control and Prevention defines ART as "all fertility treatments in which eggs or embryos are handled. In general, ART procedures involve surgically removing eggs from a woman's ovaries, combining them with sperm in the laboratory, and returning them to the woman's body or donating them to another woman" (CDC, "What is Assisted..."). ART services helped to shift the perspective of infertility, changing it from a dark cloud and a women's burden to an optimistic opportunity for assistance in infertility. There are now more possibilities and hopefulness for fixing infertility issues.

Despite these achievements in helping those with infertility, not all areas of the globe can easily receive treatment; some do not have the option of IVF procedures. While others live in the 21st century with new technologies that aid infertility, others still live in the 1800s with no

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[1] See the source "God Opened Her Womb" by Professor Joel Baden for more information about the biblical conception of fertility and infertility.

solutions. This phenomenon is occurring because of the unequal distribution of these costly operations.

Unequal access leaves many women feeling excluded, overlooked, and even rejected, as they are banned from the hopefulness they see others enjoying. There are invisible barriers blocking women from receiving treatment; financial obstacles and other external factors make it nearly impossible for women in low-access countries to obtain remedies for their infertility troubles. As a reader, people might be wondering, why should we care? We should care about global women's infertility because if women choose to conceive, they should have options. How can we have options but not provide them for everyone? Examining these factors spotlights the imbalanced availability of infertility treatments for women and what this means for the future population. With a deeper look at countries all over the globe, unequal access will be evident, and the effects with be illustrated through the overall infertility rates. In addressing these concerns, we can ponder if the world is equally globalized and, if not, what should be done about it.

Financially, IVF and basic assistive reproductive procedures are expensive, not only due to the technology used but also to keep the egg fertilized. IVF costs have led many couples to look for a more affordable price, usually found outside their home country. According to CNBC author Megan Leonhardt, the average patient paid "more than $22,000 for a single IVF cycle... Many times, that price does not include the necessary fertility drugs and testing, which can add up to an additional $3,000 per cycle. Not to mention the expenses associated with pregnancy and a hospital delivery." The cost of IVF is not an affordable option for those without money to spare. Some would say, why not use health insurance to help pay the price? The cost of treatment is usually not covered by insurance; some countries do not find the procedure a primary health

concern, making it not publicly covered. If we could create a low-cost option, this could help those that need monetary aid and keep the distribution more equal than it is now. However, for this to occur, infertility needs to be seen as a bigger deal to get the attention of the governments in every country. Infertility needs to be seen as a medical condition that needs to be funded by health insurance. Infertility is not seen as significant compared to other conditions; it is a silent disease. It cannot be seen on the outside with easily diagnosed physical symptoms and cannot be diagnosed by simply looking at someone. Thus, people do not emphasize helping people with infertility issues as much as they should.

BACKGROUND & IVF HISTORY

The CDC named in vitro fertilization (IVF) the most favored assistive reproductive technology due to its overall success rate and availability. *In vitro* is a Latin term for "within the glass," referring to the laboratory or glass tube. To summarize IVF in simple words, the procedure involves extracting a woman's egg and fertilizing the egg in a laboratory. The embryo is transferred into the woman's uterus through the cervix (CDC, "What is Assisted…"). The procedure is favored over other reproductive technologies because women can use their own or donated eggs.

Rabbits in a laboratory were the first significant development in the production of IVF. In 1934, Gregory Pincus discovered the possible solutions to infertility concerns. Pincus "claimed that he had achieved in-vitro fertilization of rabbits in his Harvard laboratory" (Braun). Pincus was a Harvard biologist noted as the Frankensteinian scientist (Gross). According to the BBC, Pincus "created fatherless rabbits fertilized in a dish, which were raised to a healthy, hopping adulthood" (Gross). Although this development was momentous, it sparked a religious dispute

with the public. Pincus was vilified in the national press for tampering with life and pretending to play God (Braun). As IVF continues to evolve, it deals with the idea of "playing God" and what that means for those that acquire the treatment. All assistive reproductive technology can be seen as controversial from a biblical and religious perspective due to infringing God's path and tampering with human nature. From a biblical outlook, scientists attempt to violate god and mimic his work by creating life with a laboratory tube.

After the rabbit experimentation, Pincus and a lab technician Miriam Menkin, achieved the first human egg fertilization in 1944 (Gurevich). In England, the world's first in vitro fertilization (IVF) baby was born in 1978, with the egg being fertilized by Dr. Robert Edwards and Dr. Patrick Steptoe (Jauniaux and Rizk). The baby was named Louise Joy Brown, making the baby famous in England and worldwide.

The birth of Louise Brown marked a new beginning for infertility treatments. The journey to developing IVF was long but awarded by making it possible to do the impossible. Before IVF, women were punished for infertility; it was almost like an incurable disease causing mental hysteria to all those it affected. Over time, with the help of doctors and scientists, there are more possibilities and solutions for all types of infertility, hopefully decreasing the mental hysteria women have to endure.

Infertility perceptions started to change as IVF became more popularized and globalized. Instead of being the ultimate punishment and incurable, infertility was seen as a severe medical condition that could be cured or at least decrease the burden for women. IVF and other reproductive technologies were seen as miraculous fixes to a medical condition severely stigmatized in all cultural societies. The stigmatization has decreased over time, but we are now seeing a new punishment unfold; do these costly procedures set uneven advantages?

The barrier produced by IVF poses a human rights issue; the procedure could be potentially transformative; however, it is not available for all women. Only certain types of individuals can receive treatment. These individuals are either wealthy, heterosexual, or married couples and in some countries, all of these requirements are mandated to receive treatment.

The unequal accessibility of IVF and other infertility procedures continues to segregate the globe into highly-resourced and low-resourced countries; it is as if the world is classist concerning monetary and marital status. Depending on the person's status will determine if the person can acquire treatment. In the book *Pregnancy After Assisted Reproductive Technology*, the authors Eric Jauniaux and Botros Rizk give an extensive background about the development of infertility services and the harmful effects that connect to these technologies. The book's authors state, "A just and equitable healthcare system should provide fairly for the needs of the patients, with equity of access at a national level" (Jauniaux and Rizk). If everything were provided equitably, everyone would experience the benefits, not only highly resourced countries, and couples with higher statuses; this is the goal the world should try to achieve of distributing infertility treatments fairly.

All assistive reproductive services spawn ethical concerns regarding the cost of a non- predictable procedure and how that affects women mentally. In her article, "Pregnancy Loss, Stigma, Irony, and Masculinities: Reflections on and Future Directions for Research on Religion in the Global Practice of IVF," feminist scholar Lina Layne highlights a concern about the health and safety of these procedures. The question is, are IVF and other services necessary if it imposes unnecessary health

risks? Women can inflict unnecessary health risks, perpetuate preference for high-tech heroics, and lead women to depend on placing control in the hands of primarily male experts (Layne). The IVF industry is making money off real human complications that could be unethically endorsing a procedure that does not have a guaranteed success rate. Women could spend $22,000 on a cycle of IVF, which might not work. Linda Layne emphasizes that Americans, specifically, put too much faith " in the power of "advanced technology," [which] contributes to unrealistic expectations about pregnancy outcomes which in turn aggravate the experience of loss" (Layne). The feeling of loss could have been avoided, and money could have been saved if the woman had not gone through with the procedure. However, corporations do not exemplify this, which makes the process seem unethical and suspicious.

Another feminist, Maura Ryan, assesses if IVF is morally acceptable due to the complicated monetary exchange. The assistive reproductive industry makes money from women's struggles, which can be seen as unethical regarding the procedure's unprotectedness. IVF procedures are a robust financial chain based on how much money people can make off women's infertility pains and their vulnerability. In the article "The Introduction of Assisted Reproductive Technologies in the 'Developing World,'" Maura Ryan suggests that the monetary value in exchange for a procedure without guaranteed results is unfair and unethical. The author states, "With revenues of $4 billion a year in the United States alone, fertility is big business; entrepreneurs both within and outside of what was once euphemistically called the developing world look to it as the promising new edge of an ever-expanding assistive reproductive market" (Ryan). The market is based on women's vulnerability and difficulties with infertility. The businesses hope that women want to "fix" their issues despite the procedure not having a guaranteed success. From a feminist perspective, it is evident that the market is trying to sell a product geared towards "fixing" infertility, but what is the product? The

product is a promise, as Maura Ryan suggests. It is a promise that they will conceive a baby; it does not guarantee that everything will work as it proposes. How can women put all of their money into a promise?

Women put their money into a promise because they have only seen success stories, never stories that do not end well. If reproductive companies were honest about the results of IVF treatments, it could help eliminate ethical concerns because everything would be transparent, not blurry.

The guaranteed success of IVF is an unrealistic expectation enforced by the media. IVF is almost always seen as a promised expectation of conceiving a child. These expectations might not result in the reality the couples expect, which can lead to severe mental hardships regarding pregnancy loss. The mothers expect they will beat the odds or be the lucky ones, and when this does not happen, it could lead to a worse ending than predicted. Hence, Layne believes that infertility treatments, especially IVF, can do more harm than good. The ending query is if this is morally acceptable, and if not, is it ethical? If not, we cannot let corporations slip by without posing the accurate results of IVF. IVF is not a procedure that always ends in a healthy pregnancy; however, this is always portrayed to women. Infertility is already a vulnerable state for women, and if corporations are taking advantage, why should our global society continue to let this happen? Who knows what this could lead to and what other medical conditions this could happen to without us knowing?

PRIVILEGE VS. UNDERPRIVILEGED

In this world, there are highly-resourced countries and low-resourced countries. As much as society would hope money would not determine access, it dramatically affects availability for about everything. In this section, named Privilege vs.

Underprivileged, I dissect how money is the number one barrier affecting IVF availability globally. Financial protection and stability exist in high- and middle-income countries, especially in the healthcare system. Healthcare systems in low-income countries are focused less on infertility services. Instead are trying to fix more prevalent and life-threatening conditions, like body-functioning diseases. The countries under consideration are Denmark, the Czech Republic, and South Africa. These countries have different IVF costs and differing rates of women's infertility. Not only are monetary exchanges in question, but the effect of tourism and how wealthy individuals benefit more than other classes, despite all different types of women being affected by infertility.

In South Africa, IVF services are not easily accessible despite infertility being a status symbol and not a very good one. IVF is costly and not covered by most medical aids, which leaves access to more wealthy individuals. In sub-Saharan African countries, a single IVF treatment costs US$2,500, but the minimum wage is US$52-60, and some people survive on a dollar a day (Pilcher). Not only is the cost affecting access, but also the focus. In South Africa, other health issues are deemed more critical than infertility concerns. South African women are pressured to give birth to many children; if this goal is not reached for health reasons, they are shunned from society and labeled as worthless. Infertility, in general, plays a very influential role in South Africa because infertility is parallel with the women's role in her relationship. If she cannot have children, her husband will find someone who can.

Helen Pilcher is an author who explores South Africa's high infertility rates and provides possible solutions to combat infertility concerns. The article "IVF in Africa: Fertility on a Shoestring" illustrates women's many barriers to receiving infertility treatments in South Africa. Pilcher begins with a story that is told to all wedded women about Betty Chishava, who had infertility issues. The story starts with, "Betty Chishava

was thrown out of her family home in Harare, Zimbabwe because she failed to fall pregnant an husband's brother. Desperate for an heir and a cure for the stigma of infertility, her husband Herbert took a new wife. Betty was left penniless and alone" (Pilcher). Sadly, many more stories are told to infertile women in South Africa, which causes women to turn to extreme measures. A woman without a child is perceived as evil or cursed, which leads them to get beaten, fake pregnancies, steal newborn babies, and take their own life due to the horrid treatments and pressures (Pilcher). South Africa's infertility rates continue to rise, and tensions continue to grow.

The immediate reason why infertility rates continue to increase is due to sexually transmitted diseases and blockages of women's reproductive tubes. Infections spread to the reproductive tubes and cause blockages, and these blockages do not allow the sperm and egg to meet in the fallopian tubes, which means the embryo cannot be created (Pilcher). A quick fix to blockages would be using condoms; however, there is a cost and cultural taboo restricting condom usage. Pilcher states, "Infections such as gonorrhea and chlamydia often go untreated, spreading to the reproductive tubes where they cause blockages and scarring. Accepting one simple thing — the condom — could change it all. But cost and cultural taboos restrict condom use. Women, most of whom depend upon men for economic security, find it hard to negotiate safe sex and difficult to refuse intercourse; those who do may risk a beating" (Pilcher). From an American perspective, many would say, "just use condoms." It is reported that less than 2% of married couples in Africa use condoms (Pilcher). Compared to the United States, 23.8% of women and 33.7% of men use condoms during sexual intercourse (Copen). Condom usage is a cultural taboo in South Africa, and as a global society, there should not be additional pressures to force condom usage. Even if condoms were added, it would not fix the blockages in the fallopian tubes, leaving many African women without any other options.

Also, the government continues to overlook the aid in infertility services because of the rise in malaria and diarrhea. These other health concerns are deemed more critical, forcing the implementation of infertility services to be on the back burner. The government puts money into family planning but ignores the real problem, infertility (Pilcher). Helen Pilcher includes a quote from a fertility specialist named Willem Ombelet; he states, "We have to convince the Western world that infertility in Africa is a real problem" (Pilcher). Why must Africa convince the Western world when the issue of infertility is everywhere? There is a stigma that African societies are too fertile due to the number of children born per family, but these statements overgeneralize many women. The women getting beaten and shunned for their infertility and inability to get pregnant would agree that IVF services need to be more accessible and low-cost.

Compared to South Africa, the Czech Republic is the cheapest place globally to receive IVF. The prices of IVF start as low as 2500 Euros ($2674.36), and egg donations from 3800 Euros ($4,065.041) (Wiecki, "IVF Czech Republic"). By 2020, more than 30,000 IVF cycles have been completed in the Czech Republic. With the country's success rates and cost, it is the breeding ground for tourists interested in receiving IVF treatment.

The Czech Republic does not have the same issues as South Africa; it has no problems. Most of the eggs provided are through donations, which explains the lower cost. Additionally, many couples that have received treatment are foreign couples. To explore the tourist attraction of the Czech Republic, the author Amy Speier, in her article "Creating a Real Home Away from Home" for North American Fertility Travelers," explores couples' experiences and highlights the benefits of receiving treatment outside the United States. Throughout the article, it is clear to see who these tourists are and why the Czech Republic is the best place to receive treatment (according to those that have received treatment).

In the Czech Republic, many IVF center owners gear their treatment to be accessible in terms of cost and achievement. Amy Speier states, "IVF brokers are Czech American couples who are entrepreneurs who help couples gain access to assisted reproductive technologies (ARTs) using readily available egg donation in the Czech Republic" (Speier). Not only are most of these companies owned by Czech American couples, but couples that have suffered infertility themselves. These couples utilize their experience to understand North Americans experiencing infertility and make it easily accessible to those unable to afford treatment in the United States (Speier). It is evident that the Czech Republic profoundly cares about those with infertility issues by decreasing the barriers women go through to receive treatment.

For instance, Hana, the owner of IVF Holiday, and Petra, the owner of IVF Choices, both encountered high costs of American fertility medicine and have turned to "reproductive tourists" to the Czech Republic (Speier). Both owners have realized how much more affordable the Czech Republic options are (Speier). The difference between the Czech Republic and other countries availability of IVF is that the Czech Republic cares about how that person receives treatment. Is it an affordable option? Is it going to be the best option for them? The Czech Republic aims to answer those questions and is not only concerned about the profit of the reproductive profession.

However, something that must be addressed is the unfairness of this tourist attraction.

Which types of people can afford to go across the world to the Czech Republic to receive medical treatment? Only those financially wealthy/stable can afford a plane ticket, a hotel stay, and potential recovery medicine. Yes, the country has broken many barriers to access, but it is not entirely accessible to all individuals. The Czech Republic only allows heterosexual married couples to receive treatment and ignores same-sex individuals. The Czech Republic is financially

available, but sadly, the cultural standards enforced leave the availability to only particular types of couples.

One country that differs from South Africa and the Czech Republic is Denmark, which has the highest IVF success rates and welcomes every type of person. Denmark receives generous state funding, with the public health care system paying for most infertility treatments. IVF in Denmark has wholly transformed the country into accepting all people and breaking down every barrier that has arisen.

Denmark has faced many breakthroughs and challenges with IVF, which they have overcome to match the social and political development of the world. Sebastian Mohr and Lene Koch wrote an article called "Transforming Social Contracts: The Social and Cultural History of IVF in Denmark." The report explores all the changes in Denmark since the development of IVF. The authors state:

> What began as a medical attempt to help childless heterosexual couples have children has become a widely used and integral part of the Danish social fabric. IVF transformed Denmark: the use of reproductive biomedicine became normalized to the degree that access to reproductive health services is not regarded just as an individual matter, but a collective responsibility. Eight percent of children born in Denmark every year are conceived using reproductive biomedicine. These children are the product of a collective reproductive investment. (Mohr and Koch)

Denmark has the highest success rates, with more babies being born through the help of IVF services. A total of 12,328 treatment cycles of IVF were carried out in Denmark in 2015, which made it one of the leading countries for the total percentage of children born per year (Mohr and Koch). How can these numbers be possible if IVF is such an expensive treatment? In

Denmark, the public covers IVF costs and most fertility treatments because they fall under Danish public health. The authors state, "The tax-financed Danish public health service covers IVF treatments for all involuntarily childless women residing in Denmark" (Mohr and Koch). Making IVF access more available financially allowed the procedure to be more openly available to everyone, not only the wealthy. Thus, Denmark differs from South Africa and the Czech Republic. South Africa focuses on other medical conditions while infertility takes the back burner. The Czech Republic is not costly but focuses on tourist attentiveness, less on the big picture. The big picture is availability for all, not only wealthy heterosexual married couples.

Infertility affects all types of women and men, so there should be options for all women and men.

Money can be the reason why someone receives treatment that others cannot. However, we live in the 21st century and have technologies beyond what was expected in the 1800s. Why is money still the barrier? This problem can be seen with all medical conditions, not only infertility. There are solutions to most medical diseases, but money stands in the way. Denmark has decided to end that endless chain and found ways for money not to be an issue. The country focused on public funding and making women's pain heard by providing options for those with infertility conditions.

Additionally, Denmark concentrates on the future and what that means for populating their country. There is no need to complicate a problem that has a relatively simple solution. Make infertility treatments publicly funded or at least under the health insurance umbrella. This is not a reality for South Africa because money is spent elsewhere. Instead, the country could focus on a low-cost option that works to clear sexually transmitted diseases and fallopian tube blockages. At least providing a solution to women with infertility so the stigmatization and brutality could decrease. Countries must focus on infertility and not letting women sit with a

massive burden while others have options due to their monetary status. There are options; governments need to want to help their women citizens and help them fight this silent disease that mentally distresses their life.

THE BIG PICTURE

A hypothesis to consider is the connections between the availability of IVF and the possibility of terminating or at least decreasing infertility for good. Globally reducing infertility is possible if we explore genetics. Genetically, we could alter infertility and, in future generations, change infertility concerns forever. We know that IVF has made it possible to conceive with infertility troubles. Additionally, there are procedures to decrease/fix any women's infertility concern (within reason). If IVF and other reproductive services were easily accessible, infertility would no longer be as big of a crisis.

For instance, if women worked to fix hormonal imbalances, blockages, and other factors that lead to infertility, fewer women globally would have that condition. If this cycle continues eventually, in future generations, the sequence of DNA that connects to infertility patterns will be read differently. This phenomenon is called epigenetics, which according to Jan Baedke, is:

> [D]escribed as the investigation of regulatory non-DNA factors that are taken to be causally responsible for relaying genetic information. These factors are addressed not only to explain developmental phenomena, like phenotypic plasticity or, more specifically, cancer, schizophrenia, obesity, alcoholism, and aging, but also to aid in the search for successful associated medical applications, like stem cell therapy and cloning. In addition, epigenetic factors are highlighted in investigations of heredity phenomena, like disease etiology and

sex-linked inheritance patterns. (Baedke)

To summarize, epigenetics are modifications to DNA bases that do not alter the DNA sequence but can change or enhance its transcription. Epigenetics can affect gene expression for the offspring of a woman depending on how the baby was raised in the womb; also, epigenetics could be changed by a person simply aging.

Using epigenetics in this scenario could help explain how infertility diseases are passed through genetically and help us change future generations' infertility troubles before they occur. According to the CDC, "not all epigenetic changes are permanent. Some epigenetic changes can be added or removed in response to changes in behavior or environment" (CDC, "What is Epigenetics"). The mother can affect babies during pregnancy; some factors, including diet, smoking, alcohol consumption, and stress levels, could affect the baby and have long-lasting implications. Using infertility procedures to our advantage could eliminate or at least decrease the number of women with infertility issues. If we can alter lifestyle choices during pregnancy and use infertility treatments, over time, the sequence of infertility could be changed during transcription and decrease the likelihood of passing on infertility conditions to women's offspring.

To get to this place of using epigenetics, we need to make IVF accessible to everyone. The first step would be creating a low-cost option to match the results of IVF but with a low- scale budget. Many countries have begun these options, but more needs to be implemented. Of course, it will be challenging, considering the technologies involved are expensive. I am not suggesting making IVF cheaper but investigating creating a whole new reproductive service that will cost half the IVF price. In most cases of infertility, some blockages block the sperm and egg from meeting. If there was another option to clear out the blockages and help with other infertility troubles, it could be another less costly solution. These possible solutions could help

decrease infertility rates and even solve other infertility concerns for both men and women.

CONCLUSION

IVF procedures need to be more easily accessible with higher availability for all women across the globe. Money should not be a barrier women must overcome to face their infertility concerns. Infertility is a burden that women deal with, and in some countries, someone is punished for infertility. In today's day and age, technology has boomed since the 1970s there are more options for treating most diseases. Suppose infertility was seen as a more prevalent disease. In that case, it could spark enough attention for scientists to create more cost-efficient options or research other solutions.

With all the technology and developments the world has made, women should not be experiencing as much mental anguish regarding infertility. Women are the ones populating the Earth, so why should women continue to be ignored with their infertility troubles? If we want the Earth to continue to populate as a global society, we must address infertility concerns quickly and provide more cost-efficient procedures. Infertility affects ALL women, so the options should match the circumstances presented, especially if we want global infertility rates to decrease or eventually diminish.

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Chemistry

EJ Nyameh
"Are EVs Truly Green?"

Mentored by Nathan Zook
Montgomery College

"A unique introspective on the benefits and drawbacks of our society's continued implementation of electric vehicles. EJ's paper and presentation challenge us to consider the implications of EV use that the public often doesn't see, ranging from mining to environmental impacts. However, while presenting these potential hazards, EJ fairly focuses on cost savings and benefits with the consumer in mind. Overall, a balanced, well-thought out summary of the state of 'green-ness' of the EV market."

Dr. Connor Bilchak
Visiting Assistant Professor,
Chemical Engineering
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Are EVs Truly Green?

After a while of technological innovation, we recently realized that our creations had adverse side effects on our environment, one significant effect being pollution. It's been evident that pollution has affected our air quality, which in some places is horrendous, and the leading cause of air pollution is carbon dioxide. Carbon dioxide is the primary greenhouse gas our actions produce; flying planes, driving cars, and smoking all produce carbon dioxide. Nowadays, we have millions of airplanes and vehicles in service, and the emissions have increased alarmingly. Many automotive brands have done their best to reduce emissions with their combustion engine cars, but it's reached a point where even doing that will only be able to make a small change. As a result, more automotive makers have started switching to electric vehicles. Companies like *Tesla* have been making electric cars for a while; everyone else is now hopping on that wave, all in the name of preserving the environment, right?

When automotive companies advertise their electric cars, they say no emissions are being produced. However, Attaining the materials used for EV batteries is where the emissions come in. Between combustion engine cars and EVs, EVs produce more emissions when assembled. However, EVs are more environmentally friendly in the long run because they have no tailpipe emissions, so that part of the advertisement is correct.

What about the cost of EVs? Will they be cheaper or more expensive to maintain? These are questions that many consumers are concerned about when considering switching over to their first EV. As more EVs roll into your local dealerships, we see the daunting prices that come with them. For example, EVs from *Hyundai* or *Toyota* have starting prices close to $50,000, which you'd typically see from *Acura* or *BMW*. On top of the expensive price tags, we have to think

about the pandemic and how that has caused supply chain issues, which resulted in dealers putting markups on the cars, increasing the prices by thousands of dollars. To try and mitigate that, the government has posed tax credits to anyone who purchases an EV, where the amount varies from state to state. Even with the tax credits, the price tags are still expensive, and unfortunately, the tax credits only apply to vans, SUVs, and pickups with an MSRP under $80,000 and sedans with an MSRP under $55,000 (IRS). But in the long run, you save more than purchasing a car with an internal combustion engine.

One of the most prominent places where you save is when it's time to fill up or charge up, in this case, your EV. For example, I will compare an EV and an internal combustion engine car from the same company. Hyundai recently remodeled their Tucson for the 2022 model year and introduced the Ioniq 5, their brand new EV for the 2022 model year. The average person drives about 15,000 miles a year(EPA), and with inflation, the average person in the US pays about $4 per gallon, and the Hyundai Tucson has a 14.3-gallon tank. It has a combined fuel economy of 26 MPG, which means it has an average range of about 372 miles on a single fill-up. For the EV, let's assume you'll pay 14 cents per Kilowatt-hour, or kWh (EPA). We will use the standard range Ioniq 5 for this comparison which has an average range of 220 miles (Hyundai USA). For reference, the Ioniq 5 has a 58 kWh battery (Hyundai USA). Multiplying the battery capacity by the amount you pay per kWh, you have $8.26, vs. $57.2 filling up at the gas station. Using the annual average of 15,000 miles, that'll convert to about 1,250 miles monthly. Divide the monthly average by the Tucson's range, and you get 3.36, meaning you'll have to fill up about three times per month. Doing the same for the Ioniq 5, you get 5.68, meaning you'll have to charge your EV about 5 to 6 times monthly. In that month, you would've spent about $172 at the gas pump, which translates to $2,064 a year vs. roughly $50 a month, estimating about $600 annually at the

charging station. Using these numbers, you save just over $1,400 annually when you drive an EV. Over a decade's worth of time, that's roughly $14,000 worth of fuel savings. You may pay a heavy upfront price but save significantly on the back end.

It's no question that EVs are better for the environment and that the automotive industry is moving towards electrification. Even if they are better for our environment, some places need improvement. EV batteries are most commonly made of Lithium-ion (Li-ion). To create these batteries, they need a few very scarce metals. Cobalt, Graphite, and, as the name suggests, Lithium are all required to make EV batteries. The problem with that is how detrimental it is to the environment. South America, for instance, has many "lithium fields" specifically located in the Salar de Atacama salt flats in Northern Chile. These fields have a wide variety of colors representing the lithium carbonate concentration. Although Lithium is paving the way for electrification, it does come at a cost. Lithium extraction can result in soil degradation, water shortages, biodiversity loss, ecosystem damage, air pollution, and global warming (Euronews.green). These side effects will worsen as the demand for EVs rises and the amount of Lithium extracted continues to increase. Lithium is a non-renewable energy source that creates the possibility of renewable energy. Because of the increased demand for Lithium, South America was one of many places to extract; The United States quickly became a mining site, as well as Australia and China. Zimbabwe, Brazil, and Portugal also have mining sites but are on the smaller side. In Portugal, they're experiencing the ramifications of Lithium extraction big time. Portuguese residents have protested and rallied against mining lithium and other corrosive metals. Still, the government has done nothing about it and let mining companies continue their work.

It is evident that places like Portugal, Zimbabwe, China, and especially Northern Chile have experienced the side effects of Lithium extraction and are paying the price for it. EVs may benefit the environment, but only in certain places. In the US, EVs are a great benefit, creating cleaner air in the streets of cities and keeping more money in our pockets when it comes to maintenance. But are they truly beneficial for everyone? As I explained earlier, Portugal has been experiencing the side effects heavily, and the same can be said about China and other areas where Lithium extraction is concentrated. Li-ion batteries aren't creating a cleaner environment for everyone; It's not right that the US experiences the benefits of the suffering from other places worldwide. So, what is the solution? How can we ensure that we can create a cleaner environment for Americans and on a global scale? The best way to put progress toward that type of world is to find a substitute for Lithium and Cobalt. Those two metals are crucial for making EV batteries, so we need elements that are close neighbors of Lithium and Cobalt but don't have the same environmental effects. Besides, that substitute may be more beneficial than we think, considering that Lithium and other metals we currently use for battery production are becoming scarce. As I mentioned earlier, demand for EVs is increasing substantially. One positive note, though, about Li-ion batteries is that we can recycle them, so EVs today or any other electronic that uses Li-ion batteries can reuse components rather than get rid of them completely. That also means that when there is a solution for a substitute, EVs can stay on the road with no problem since they don't create any emissions after production.

About substitutes, we have a few to consider. First, we have Salt/ Sodium. Sodium is closely related to Lithium but doesn't pose the same environmental impacts. Sodium doesn't require extracting scarce resources, so it's cleaner for the environment. However, Sodium is three times as heavy as Lithium (Euronews.green), which would significantly contribute to EVs' weight,

drastically decreasing EVs' performance, especially those with performance in mind. On top of that, Sodium batteries may not be as powerful because they have a lower cell voltage (Euronews.green), which means EVs wouldn't have as much potential range as they do now and would have to work harder to achieve efficiency that they do now. Since they would have to work harder, that would mean more time at the charging station.

Another alternative we could use is seawater. Oceans worldwide have an estimated 180 billion tons of Lithium (Euronews.green), so researchers are working to find ways to extract seawater from the Lithium, put it to good use, and hopefully decrease its extracting emissions. Iron could also be considered a substitute for Lithium because of its "reduction potential," which means it won't lose its efficiency as fast (Euronews.green). Iron can store renewable energy for a longer time, which can be helpful for places or things that require a lot of energy, like a power grid. The only problem here is that Iron-flow batteries are larger than Li-ion batteries, so they wouldn't even fit in an EV. Silicon is another option, but it can't fully replace Lithium but be used as an additive to Li-ion batteries. Currently, Li-ion batteries have Graphite with multiple layers of carbon stacked on top of one another. There are tiny gaps between each stack of carbon, and Lithium ions can slip through those gaps, resulting in a loss of energy (Euronews.green). Replacing Graphite with Silicon, Li-ion batteries would be cheaper to manufacture, more effective in the long term, and lead to safer and even lighter batteries, which can help improve EV performance.

Another substitute being considered is Magnesium, which can carry a charge of +2, larger than Sodium and Lithium. As a result, batteries made from Magnesium can have a higher density and more stability and are more affordable than Lithium. On top of that, Magnesium releases two electrons during the discharge phase instead of one electron from Lithium, helping

deliver twice as much electrical energy (Euronews.green). Lastly is Hemp, a type of plant that is a fiber used in clothing, building materials, food, and car parts. Hemp can be a safer, more cost-efficient, eco-friendly option for EV batteries. *Bemp Research Corp* has developed a battery alternative that uses Hemp called Lithium-Sulphur. These batteries were made in partnership with the University of North Texas and were tested by battery scientists at the University of Wisconsin-Milwaukee. *Bemp Research Corp* says that using Lithium-Sulphur batteries as an alternative will overcome Li-ion batteries in cost, weight, scalability, performance, and recyclability (Euronews.green).

After taking time to go through each option and weigh out the pros and cons, we have a few choices of substantial substitutes for Li-ion batteries. However, researchers and scientists are still developing these types of batteries to perfection, which can take some time to accomplish. But we can't wait until alternative methods start to turn up; we must start taking action now. As I said earlier, Li-ion batteries are recyclable, which is very helpful. As a result, numerous Li-ion battery recycling plants have started operations and have expanded globally (Science Direct). These plants were used to recycle specific components of Li-ion batteries and refurbish and reuse EV batteries. The European Commission has been investing in used EV batteries for recycling in places such as France and Belgium. More investments have been made by collaborating with car manufacturers to collect used EV batteries to recycle them. Over time, it's evident that batteries start to lose their potential energy capacity, reducing the time you can use your phone, car, or any other electronic device on a single charge. Even if these batteries can't reach their potential, other electrically powered entities can still repurpose them. For instance, batteries with a maximum potential of 80%-85% are collected to be recycled (Science Direct). We can still use these batteries to power a utility-scale grid, a sports arena, or a telecommunication tower because these

are examples of stationary applications. Stationary applications demand a lower current density from the battery pack, so they don't need a brand-new Li-ion battery pack to power them.

We now know that Li-ion batteries have a way of making up for the emissions they initially caused from extraction, recycling, and repurposing them, which is great because it helps reduce costs to make these types of batteries. But with the demand for EVs flying off the charts, that doesn't mean that battery manufacturers will stop making Li-ion batteries because we've seen the success it's paving for cars. Along with that, we've started to notice the change in the lifestyle it brings to new EV owners. I mentioned earlier how much money you'll save when charging your EV, but that does come at a cost. You tend to spend more time at the charging station than filling up at the gas station, which can be very inconvenient for most people and their lifestyles. However, the amount of time spent charging can depend on what type of charger is being used. For example, we can use three possible chargers to charge EV batteries; level 1, level 2, and direct current (DC) fast charging (EPA). Level 1 charging will allow you to charge at 120 volts, translating to a rate of about 5 miles for every hour you charge (EPA). It takes so long to charge because it draws from a regular power socket you'd typically use to charge your phone or laptop. You can find these sockets around your house or in your garage, so charging at level 1 would be most useful when charging your EV overnight. Level 2 charging allows you to charge at 240 volts at 25 miles an hour. Level 2 charging requires a different type of socket that can still be found in your garage but requires extra equipment to make it work. You can also find 240-volt chargers at public charging stations. Lastly, DC fast charging is the best because, as the name suggests, it has a direct current from the power source straight to the car. DC fast charging can charge at 100 to 200 miles for every 30 minutes of charging. You can only find these at

public charging stations, but they are hard to find now. However, they're becoming widespread with more EV charging infrastructures in production.

Other factors contributing to charging speed are the amount of battery depletion before charging, how much energy the battery can store, the battery type, and the battery's temperature (EPA). For example, using level 2 charging, it would take under 6 hours to charge your standard range Ioniq 5 from 10% to 100% (Hyundai USA). However, most car manufacturers recommend charging your EV to a max of 80%, and the Ioniq 5 can charge from 10% to 80% in just 18 minutes with DC fast charging (Hyundai USA), the same numbers for the Kia EV6 (Kia.com). In addition, Ford's Mustang Mach-e can charge from 10%-80% in 38 minutes with the standard battery pack (Motor Trend). Most EVs are so efficient with their 10%-80% times because batteries charge faster when there's more depletion, which is why it matters how much depletion you have when you charge your EV. However, even with such efficiency, it still can't compare to how much time one spends at a gas station.

What other alternatives can we turn to that are more convenient and clean for the environment? The only other available option right now is Hydrogen Powered cars. These cars have a Hydrogen Fuel Cell, which is the heart of the car. Fuel cell vehicles (FCVs) fix the problem of waiting an extended time, as it takes less than 5 minutes to fill up an FCV (EPA). The experience of filling up an FCV is similar to filling up a gas-powered car; you open the door and connect the Hydrogen dispenser to your vehicle. FCVs are also very similar to EVs because they use batteries to send power to the wheels. However, they differ because EVs need their batteries charged to keep producing electricity, while FCVs generate electricity onboard (EPA). In addition, FCVs combine Hydrogen from the fuel cell with air, and the only emission you'd be producing from that is water. Another benefit that FCVs hold is that they have a variety of

production methods. The most common form of Hydrogen production for fuel usage comes from natural gas, but it also can be made from water, oil, coal, plant materials, and even trash (EPA).

FCVs are a great alternative to EVs. But many problems still linger with them and show why we can't switch to them immediately. Hydrogen fuel does create greenhouse gas emissions. Even so, FCVs don't have harmful gaseous tailpipe emissions; they are still more eco-friendly than gas-powered cars (EPA).

Another factor that makes FCVs difficult for an alternative is their availability. *Toyota* is the only automotive manufacturer that produces FCVs, and out of their entire lineup, they only have one car that uses Hydrogen Fuel Cell technology, the Toyota Mirai. The Mirai initially launched in 2014, which honestly looks like a luxurious Prius. However, it recently got remodeled for 2021; now, you might mistake it for a *Lexus*. Another challenging factor that falls into availability is the infrastructure needed to fill up FCVs. The only places where Hydrogen fuel stations are available are California, where they're most popular; Vancouver has a few of them, and there are two stand-alone stations: one in Québec and the other in British Columbia (US Dept. of Energy). Other than those places, no Hydrogen fuel stations aren't built anywhere near or in the US. We also need more automakers besides *Toyota* to create FCVs to make it a higher priority to start building the infrastructure for hydrogen stations.

After reviewing all the possible alternatives, the only viable option would be to use a different type of battery to power EVs. We've already reviewed a few candidates that could be a substantial replacement for Li-ion batteries, and the few that would be feasible to use are Magnesium, using Silicon as an additive, and Lithium-sulfur. Now that we have cleaner solutions to battery production, what is being done about it? What else has been discovered

through research, and how long will it take realistically to switch from Li-ion to a cleaner source? In the US, the President has set an economic agenda for EVs to make up 50% of all cars sold by 2030 (The White House); is that realistic with the progress and pace we're going at?

We need to find out the answers to comprehend further where the automotive industry will go from this point onward. I plan to do more extensive research to find out if automakers have considered using alternative metals or materials for EV batteries and how much progress has been made regarding developing FCVs and other types of EV batteries. I also plan to see if emissions are produced from the substitute materials listed above and how they compare to the emissions from Lithium extraction.

As we know, President Biden aims to have EVs represent half of the cars sold in America by 2030; to meet that goal, we need to progress with developing EV batteries that utilize different materials. Earlier, I showed that Magnesium (Mg) has promising energy efficiency and cost benefits. To genuinely understand Mg, it is crucial to understand what type of battery frame it will use. As lithium continues to be constrained worldwide, research has begun on multivalent-ion batteries (Science Direct). These batteries are based on metal ions with more than one positive charge and are highly abundant in Earth's crust (Science Direct). Mg-metal has almost double the volumetric capacity of lithium and is safer to be used as an anode because of its low reactivity. However, one problem is that Mg-metal is impermeable with many liquid electrolytes, a key component in battery stabilization and lifespan. It is impermeable because Mg develops a passivation layer, making its surfaces less reactive for Mg ions to pass through (Science Direct). Even though making electrolytes for Mg batteries is still possible, it is still difficult when the range of options is limited. But in this minimal field, two possibilities can work with the surface of mg-metal; aluminum-centered anions (negatively charged ions) and boron-centered anions.

Since these are negatively charged ions, that does pose a challenge when it comes to the engineering of a rechargeable battery. These ions have a divalent character (Science Direct), which causes the kinetics to be slow in mg-ions. However, Mg-ion was far more successful regarding hydrates because water can withstand the interaction between the polyvalence and the cation.

Even though Mg is a great candidate as an alternative to lithium, scientists, and researchers must work out many quirks before it can be a successful battery that can go into mass production. Innovation takes small steps at a time, so while we look for cleaner alternatives, we need to look for a quick fix for lithium batteries to increase efficiency and operation safety. As I have mentioned, silicon has proven to be a great candidate for an additive in replacement of graphite. But it's important to note how exactly silicon will play its role in battery production. Pure silicon isn't the way to go for various reasons. Firstly, pure silicon in electrode form can have a volume expansion effect during its cycle of 300% (Science Direct), which would result in an overgrowth of the solid electrolyte interphase (SEI) and destabilize it. Pure silicon also would pulverize the electrode material structure and cause potential loss of electrical contact. Finally, the silicon can still react with the electrolyte because of the volume expansion, further deteriorating the battery's structural and electrochemical components (Science Direct). Despite its major drawbacks in its pure form, it doesn't eliminate the possibility of use. We could hybridize it through a nanostructure that significantly improves cycles and increases battery efficiency. To do that, we need to know about silicon-based anodes inside out and how they compare to Graphite anodes.

As I mentioned previously, graphite is an additive used for lithium-ion batteries. However, there are some drawbacks to be aware of. For instance, graphite structure has a low

specific capacity, a high solvent selectivity, and slow lithium diffusion, which is a hazard and makes operating conditions dangerous (Science Direct), especially when the lithium metal disposition is at a low temperature on the surface. The opposite can be said for silicon, which has a high specific capacity and low electrical potential, making it optimal for utilization. Despite these benefits, we must consider silicon's problems that I stated earlier. To make silicon safer, we must reduce the particle size, helping to create room for hybridization. To keep it stable and minimize the irreversible capacity, conductive agents such as carbon black and binders like polyacrylic acid must be integrated (Science Direct). All these materials must work flawlessly with each other, so we must go over the silicon nanostructure to make it possible. There are numerous ways to go about it when preparing the nanoparticles for hybridization. Solid-phase synthesis methods like magnesium thermal reaction are suitable for yielding porous silicon or mechanochemical processes such as high-energy ball milling that can get even nano-sized silicon (Science Direct). On top of decreasing the size of the silicon particles, the energy gained can stimulate reduction processes (Science Direct). There is also chemical vapor deposition, which decomposes gaseous silicon precursors to form those silicon particles, as well as electrochemical etching methods that help control the microstructure of silicon (Science direct). Now that we have several ways of converting silicon to hybridized nanoparticles, we must review their performance results. After 50 life cycles, the nanoparticles have been shown to have a high reversible capacity (Natural Materials), proving to have good long-term cycling stability. While Mg batteries are still a work in progress, using silicon as an additive will be a great idea to increase the productivity and efficiency of lithium-ion batteries. However, materials for lithium batteries continue to become scarce as time goes on, so we must continue to develop Mg batteries for the sake of our environment.

While these recent discoveries have proven suitable alternatives to create a cleaner environment, it raises concern about how far progress will get with these new batteries by 2030. EVs have been around for a long time but have recently started to gain popularity in recent years. You have to think about how long it has taken to create lithium-ion batteries successfully that can be mass-produced. Lithium-ion battery production dates back to the 1970s (National Library of Medicine). It has taken tremendously long to get to where we are today with lithium-ion batteries. Considering that, the production of Mg or silicon-based lithium batteries could take longer than expected. We have made exceptional technological advancements in the last few decades. However, given that we are still in the early stages, there's still much more to learn and testing that still has to be conducted to ensure that these alternatives won't bring up any downsides to EV performance.

While it may not be the quickest solution to a problem that has yet to grow, it is definitely solid. Using alternative metals that are more earth-abundant and eco-friendly will benefit car manufacturers rather than relying on lithium, which is on the verge of becoming scarce. Both Mg and silicon are more affordable to manufacture, resulting in a lower sticker price you'll be paying at your local dealer. When graphite-based batteries eventually go out of production, they aren't wasted; we can repurpose them, so those batteries can still significantly contribute to a cleaner environment. Whenever Mg batteries and silicon additives are ready for mass production, we will begin the shutdown of lithium extraction sights for the better of our environment and any nearby residents that may be affected by those sights. Going down this path will genuinely create a cleaner environment worldwide, and it won't be too long before another discovery is made that has even more benefits than Mg and silicon.

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Social Justice

Carolyn Ferrer

"The Baseless Discriminatory Elimination of Transgender Americans"

Mentored by Laura Ochoa
Bergen Community College

"This paper is thoroughly researched, substantiated by both quantitative and qualitative data/ evidence. It logically explained the causes and effects of gender dysphoria as well as the procedures and implications of gender-affirming health care. It drew a nice connection between social justice and identity politics."

Dr. Dean Chen
Professor of Political Science
Ramapo College

The Williams Institute approximates that as of 2021, there are a total of 1.6 million transgender people, 300,000 of them being transgender minors, living in the United States (Flores, Herman, O'Neil, 2021). Despite trans people making up less than one percent of the American population, their existence has been politicized and demonized by the American Republican Party. 2023 has seen the strongest push for anti-LGBTQ legislation, predominantly targeting transgender people, with over 340 anti- LGBTQ bills being introduced before the first two months of the year have ended (Johnson, 2023). In the name of "protecting the children," one of the most heinous and vile forms of anti-trans legislation has come into effect in several states and has become the main battlefield for the LGBTQ+ community and their allies, calling for the complete ban of gender-affirming care for all transgender teens and young adults, some of these laws calling for the imprisonment of parents and healthcare providers that properly nurture their trans children. The banning of medical transition for trans youth goes against the decades worth of data and evidence collected by hundreds of psychologists and doctors who all agree that the proper way to treat gender dysphoria, the typical psychological diagnosis for transgender people, is gender-affirming healthcare. While gender dysphoria is not a mental illness, lack of treatment will result in the development of mental health issues, mostly depression, and anxiety.

This paper will define gender dysphoria, the mental condition that most transgender people experience, discuss the different types of gender-affirming care that treat gender dysphoria, and describe the ways American lawmakers are attempting to erase trans people from public society.

While genderqueer identities have dated back thousands of years in early Mesopotamia, gender dysphoria has been recognized as a viable mental condition since 1980 (Daniels, 2021). The diagnosis was initially named gender identity disorder but was renamed gender dysphoria in 2013 to characterize the condition more accurately (Koh, 2012). The DSM-5 defines gender dysphoria as "psychological distress that results from an incongruence between one's sex assigned at birth and one's gender identity." For example, someone assigned male at birth based on sexually distinct characteristics who feel extreme discomfort with the masculine sex characteristics that they develop as they mature, a deep voice, facial hair, adam's apple, and unease with how society as a whole perceives them will typically be diagnosed with gender dysphoria. The DSM-5 is the first psychological source to recognize that gender dysphoria is typically experienced early in life; within the last five years, there have been over 120,000 gender dysphoria diagnoses for 6 to 17-year-olds in America (Respaut, Terhune, 2022).

The symptoms of gender dysphoria, while similar, vary between adults and children; however, all patients must have experienced intense distress with their societally perceived gender identity for at least six months. To receive a gender dysphoria diagnosis, incongruence between the adult patient's sex assigned at birth and their gender self-perception must manifest in at least two of the following: a strong desire to be a different gender, a strong desire to be treated as a different gender, a strong conviction that one has typical feelings of a different gender, a strong desire for the primary and/or secondary sex characteristics of the opposite sex, and a strong desire to remove one's current primary and/or secondary sex. Children must

experience six of the following to receive a gender dysphoria diagnosis: an insistence that one is a different gender, a strong desire that one is a different gender, wearing clothes that typically correlate with the opposite sex, a strong preference for cross-gender roles in make-believe play, a strong preference for toys, games, or activities stereotypically used by the other gender, a strong preference for playmates of the other gender, a strong dislike of one's sexual anatomy, and a strong desire for the sex characteristics that match one's experienced gender (Turban, 2022). The American Medical Association, the American Academy of Pediatrics, and the American Psychological Association all agree that the primary way to treat gender dysphoria is gender-affirming care, which can be pursued in several different ways ((Smith, 202; *AAP Policy Statement Urges Support and Care of Transgender and Gender-Diverse Children and Adolescents*, n.d.; *Proposed Discussion Points to Oppose Gender-Affirming Care Criminalization Bills*, n.d.).

The social transition is the first recommended step for those who are dissatisfied with the gender identity that they were assigned at birth. Social transitioning is an experimental unique, nonlinear beginning phase in exploring and expressing one's gender identity, without making more permanent physical changes. The social transition will often include a name change, a change in gendered pronouns, and a change in gender expression, which may include sporting a different haircut or wearing different clothes to present more masculinely or femininely. Mental health disparities between cisgender youth and transgender youth are famously high; however, a recent study found that transgender youth who are able to pursue a social transition face similar

amounts of depression and anxiety to their cisgender peers (Durwood, 2017). If gender

dysphoria does not desist a child has options to pursue to quell it.

Puberty blockers, also known as Lupron, have been FDA-approved since

1993; the medication was originally made to suppress puberty for those receiving it

before nine years old but has become a staple in gender-affirming care for

transgender youth (Biggs). Despite the thousands of American youth experiencing

gender dysphoria, within the last five years, only 4,780 were prescribed the

medication (Respaut, Terhune, 2022). Puberty blockers aim to give transgender

children more time to decide if they want to further pursue their gender transition by

temporarily suppressing pubertal changes, as the development of adult sex

characteristics may induce high levels of gender dysphoria. Puberty blockers are

prescribed during the onset of puberty, known as the pubertal stage Tanner II, as

children start to develop secondary sex characteristics, including breast development,

facial hair, and voice changes (Hembree, 2017). If a child decides that they want to

adhere to the gender correlated with their biological sex, they will simply stop taking

the medication and go through the natural progression of puberty. If a child decides

that they want to progress further into their transition they may proceed to the typical

next step of gender transition, gender- affirming hormone therapy.

Gender-affirming hormone therapy is the most common form of transgender

healthcare among the transgender community. The effective treatment essentially

gives someone who desires the opposite sex's secondary sex characteristics the

opposite sex's puberty. Transgender men will often take testosterone in the form of

shots or gel patches; the dose starts off small but increases over time. When

testosterone is taken for months or years, the body will change. This includes a lack of or inconsistent menstrual cycle, voice deepening, facial and body hair growth, body fat redistribution, muscle growth, growth of the clitoris, and strength increase (Masculine Hormone Therapy, 2020). Transgender women will take estrogen, taken in the form of pills or shots, to quell their gender dysphoria. The body changes include decreased sex drive, breast development, softer skin, a decrease in body and facial hair growth, and an increase in body fat (Feminizing Hormone Therapy, 2022).

The former minimum age required to receive hormone replacement therapy was sixteen; however, as doctors continue to conduct studies on transgender youth, the World Professional Association for Transgender Health dropped it down to fourteen years old in 2022. Chair of the group's standards of care, Dr. Eli Coleman, values the importance of trans teens going through puberty at the same time as their peers. This medication is received after months and years of persisting gender dysphoria, therapy, doctor consultations, and parental approval (Tanner, 2022). The effectiveness of gender-affirming hormone therapy within the transgender youth community is overwhelming. A peer-reviewed study in Pediatrics (2022) found that trans youth who received puberty blockers and gender-affirming hormone therapy had "60% lower odds of moderate or severe depression and 73% lower odds of suicidality" compared to their other transgender peers (Collin, Tordoff, Wanta). Gender-affirming hormone therapy has saved the lives of countless amounts of transgender people.

The most controversial form of gender-affirming care is sex reassignment surgery. Sex reassignment surgery will give the patient the opposite sex's genitalia.

Trans women would receive a penectomy, orchiectomy, and vaginoplasty to create a vagina, while trans men would receive metoidioplasty and phalloplasty surgeries to reconstruct the vagina into a penis. This type of treatment is rare among transgender adults, as one in four trans adults have received it, but especially transgender youth (Gender Affirmation (Confirmation) or Sex Reassignment Surgery, 2021). Between 2019 and 2021, there have only been 56 sex reassignment surgeries performed on minors, and the youngest person to receive it was fifteen (Respaut, Terhune, 2022). A fifty-year longitudinal study following 681 recipients of sex reassignment surgery found only a 2.2% regret rate (Dhejne, Arver, Landen, 2014). Similarly, a study that followed 1989 transgender people five years post-operation found that only six patients (0.3%) regretted their sex reassignment surgeries (Jedrzehewski, Marsiglio, Guerriero, Penkin, 2023). By comparison, Lasik eye surgery has a regret rate of 4%. The decision to undergo sex reassignment surgery should only be discussed among the patient, their doctors, and their family, not the government.

One of the biggest concerns regarding gender transitioning among youth is the cases where transgender children change their minds; however, long-term studies disprove this myth. A five-year longitudinal study followed 317 children aged three to twelve that had socially transitioned to see if detransitioning among trans youth is common. After five years, 94% still identified as binary transgender, 3.5% identified as non-binary, and only 2.5% detransitioned. There were 92 recipients of puberty blockers; of that group, 95.7% still identified as binary transgender, 3.3% identified as non-binary, and only 1.1% detransitioned. Of the 98 trans teens who were able to receive gender- affirming hormone therapy, none of them detranitioned (Olson,

Durwood, Horton, 2022). Even those who pursue gender transitioning later in life typically have their first experiences with gender dysphoria as children. When 210 transgender men and women with an average age of 38 were asked for their earliest memories of gender dysphoria, answers ranged from four to seven years old (Garcia, 2020). The consistent early-in-life existence and persistence of gender dysphoria in children make diagnosing it early on imperative because if a transgender person finally decides to pursue gender-affirming care post-puberty, some of those pubertal changes are difficult to reverse without costly surgical intervention.

The Trevor Project National Survey annually tracks the mental health of LGBTQ youth. The data collected in their 2021 survey of over 10,000 13 to 24-year-old transgender people found that: 52% of transgender youth had extreme suicidal ideation, 20% of trans youth had made an attempt on their own life which is double the number of their lesbian, gay, or bisexual cisgender peers, and 77% of them were diagnosed with generalized anxiety disorder. When trans youth have their gender identity affirmed by their family members and peers and can receive gender-affirming healthcare vastly improves. Data analysis of the Trevor Project's 2020 survey found that "among those aged 13–17, receipt of GAHT was associated with nearly 40% lower odds of recent depression and attempting suicide in the past year (Green, DeChants, Price, 2022). A longitudinal study proves the effectiveness of gender-affirming treatment for adolescents. The study followed the lives of 55 trans teens and assessed them three times: before puberty blockers (13.6 years old), at the start of hormone replacement therapy (16.7 years old), and one year after sex reassignment therapy (20.7 years old). The teens' gender dysphoria, body image perception, global

functioning, depression, anxiety, and behavioral problems steadily improved as they received gender-affirming treatment. None of them regretted transitioning (McGuire, Steensma, Wagenaar, 2014). Gender dysphoria is not inherently linked to high levels of suicidality; however, a lack of treatment and support will lead to the development of various debilitating mental disorders, affecting transgender youth the hardest.

Despite the overwhelming amount of evidence supporting the existence of gender dysphoria and the effectiveness of gender-affirming care as treatment, Republican lawmakers continue to push forward in banning gender-affirming care. On April 6, 2021, Arkansas passed HB 1570, or the "Save Adolescents from Experimentation Act," becoming the state to start the trend of banning all gender-affirming care for those under eighteen (*HB1570 Bill Information*, 2023). Utah, South Dakota, Tennessee, Mississippi, Alabama, and Florida followed, as fifteen other red states are in the process of passing similar laws (Reed, 2023). The worst of these laws and unsigned bills include Oklahoma's "Milestone Act," which seeks to criminalize physicians who provide gender-affirming care to those under 26 with a felony, effectively banning gender-affirming care for minors and those in their mid-twenties, and Alabama's SB184, signed on April 7, 2022, which charges physicians who prescribe minors gender-affirming care ten years in prison (Burns, 2023; *AL SB184 | 2022 | Regular Session*, 2022).

Intersex people are born with unique sex characteristics that do not perfectly align with binary male and female sex characteristics. Some may live their entire lives without knowing they have an intersex condition, and others become noticeable as the intersex person experiences puberty. For example, those with Swyer

Syndrome are born genetically male with XY chromosomes but have female genitalia. As they grow older, they will not go through the typical female puberty because they lack the hormonal makeup of an average female; however, most continue to identify as female (Moss, 2015). There are many intersex conditions that are noticeable from birth, where babies are born with ambiguous-looking genitalia. For example, people born with partial androgen insensitivity syndrome, an intersex condition where the baby has XY chromosomes, are often born with an enlarged clitoris and partially undescended testicles (*Androgen Insensitivity Syndrome - Symptoms*, n.d.). The naturally occurring ambiguous genitalia are usually fully functioning; however, intersex infants are often subjected to nonconsensual surgeries that rearrange the genitalia to look like that of the binary male or female genitalia. Despite intersex people making up only approximately 1.7% of the population, it is estimated that ~0.1-0.2% of ALL live births undergo these genital mutilating surgeries (*Intersex Population Figures*, 2023). These not medically necessary surgeries can create dangerous lifelong effects that include: sterilization, chronic pain, chronic incontinence, scarring, loss of sexual sensation, inaccurate gender assignment, and general trauma (Cohen et al., 2021). Republican lawmakers do not care about the mental health or physical safety of children; they want to uphold the restrictive gender binary in society by any means necessary.

While lawmakers cannot explicitly ban gender-affirming care for fully developed adults, some lawmakers are trying to cut insurance coverage of gender-affirming care on state and nationwide levels. States like Nebraska, Arizona, and Tennessee, have had explicit policies that ban Medicaid coverage for those who

need gender-affirming care since the 1990s and early 2000s and continue to uphold them. During the recent trans panic, six other states have rolled back their gender-affirming care inclusions within the last five years (*Healthcare Laws and Policies: Medicaid Coverage for Transgender-Related Care*, 2022). Arkansas is the first and currently the only state to allow private insurers to refuse to cover gender-affirming care (*Healthcare Laws and Policies: Nondiscrimination in Private Insurance and Bans on Transgender Exclusions*, n.d.). Reliance on Medicaid is essential for the thousands of trans people who, as a group, face unemployment twice as much compared to their cisgender peers and are often fired based on their gender identity (Baboolall et al., 2021; López, 2022). Removing vital health insurance will add to the mental health crisis that transgender people face.

Em is a teenager who attends Carroll Senior High School in Texas' Southlake district. Em is a bisexual nonbinary person that goes by she/they pronouns and has been out to the public since the 8th grade. The comments on her sexuality were minimal, but as she entered high school, the queerphobia started to pick up. While the pandemic's online classes relieved Em from the bullying she faced, a slew of unnecessary online harassment from her classmates forced her back into bigoted, verbal assault. Four of Em's classmates added her to a private Instagram group chat called "Debate Channel," where she was met with a slew of misogynistic and homophobic degrading messages, which include: "You can't be they. They is plural," "It's a mental illness, not a sexuality" and "Dumb c-word. I truly loathe the people who voted by Biden," (Hylton & Hixenbaugh, 2022) Unfortunately, Em's story is not uncommon for queer youth.

Transgender youth face unprecedented amounts of detrimental bullying compared to their queer cisgender counterparts. 61% of transgender and nonbinary middle school and high school students are bullied, compared to 45% of queer cisgender students, with 50% of the bullying happening online. The damaging effect of this targeted harassment is clear; "across gender identity, 32% of transgender and nonbinary youth who were bullied attempted suicide compared to 14% who were not bullied" (*Bullying and Suicide Risk Among LGBTQ Youth*, 2021). Trans youth are victims of vitriolic amounts of transphobia for simply existing. While their actions are unexcusable, I sympathize with the bullies, as their transphobia is celebrated, paraded, and encouraged by their idolized politicians.

The threat of federal laws banning vital healthcare for transgender people across the country is undeniable. Former President Donald, who announced his bid in November of 2022, is running his platform on blatant transphobia. On January 31, 2023, Donald Trump made several promises that directly target trans people, including enacting federal laws that would eradicate the existence of trans youth around the country, establishing a basis for patients who regret receiving consensual gender- affirming medical care as minors to sue their doctors, and passing a bill that would federally establish male and female as the only genders recognized in the United States and gender can only be assigned at birth. Trump intends to "pass a law prohibiting child sexual mutilation in all fifty states," referring to medication necessary for the stability of a child experiencing gender dysphoria (Forbes, 2023). Gender Dysphoria is a mental condition that transgender people are typically diagnosed with; the condition is recognized by several internationally trusted medical

associations, including the American Medical Association, the World Health Organization, and the United Nations. Based on decades worth of data and human experience, the way to stifle gender dysphoria is by medically and socially transitioning. The most common and effective forms of gender-affirming care are puberty blockers, gender-affirming hormone therapy, and sex reassignment surgery, which help a transgender person be perceived as the gender they want to be perceived as. Gender-affirming care is life-saving, as the lack of these vital forms of medication can increase gender dysphoria, leading to severely increased depression, anxiety, and suicide rates.

Despite the evidence ensuring that gender-affirming care saves lives, Republican lawmakers seek to eliminate it from the public. The main target for Republican lawmakers are transgender youth; seven states have passed laws completely banning gender-affirming care for minors, while fifteen states are on the way to follow in their footsteps, some of these laws targeting trans young adults as well. The main way Republican politicians seek to erase trans adults is through insurance, stripping Medicaid coverage, and private insurance coverage of gender-affirming care.

The panic over queer and transgender Americans will take center stage, as the likely candidate for the Republican party will be Donald Trump, who seeks to enforce transphobic policies on a national level.

Queer Americans are under attack for simply existing as they are. Removing gender-affirming care will lead to a mental health crisis for transgender Americans nationwide. It is imperative that we not only vote for ourselves but for the queer Americans who deserve to feel safe existing in their

skin.

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Women's/ Gender/ LGBTQ Studies

Ana Sofia Paz

"Narrowing the Gender Pay Gap: The Solution for Gender Equality"

Mentored by Nathan Zook
Montgomery College

"Ana explored and debunked economic (and political) myths that development and technology will shrink the gender pay gap, which underscored the underlying misogyny in the patriarchy that keeps women earning less. She proposes the feminist and humanist changes we all need to work towards. We had a wonderful robust discussion!"

Dr. JoAnn Myers
Professor, Political Science
Marist College

Narrowing the Gender Pay Gap: The Solution for Gender Equality

As Western women, it is important to recognize that our current lifestyles would not be well-received or even allowed if it were not for the activism women did in the 20th century. As World War II ended, women in developed countries experienced a drastic change in their lives. With the development of new industries that did not require physical strength, the post-war economy fostered structural transformations that highlighted women as a source of labor that could aid countries in bouncing back. Western women arrived in the political, economic, and cultural arenas after the war to stay.

The feminist movement was not only started by economic pressure to include women as manufacturing workers. It was not until Simone de Beauvoir released her worldwide bestseller *The Second Sex*, and fourteen years later when Betty Friedan released *The Feminine Mystique,* that the conversation revolving around women's rights in the West became popular.

The feminism of freedom is Benauvoir's liberating solution to the subjugation of women. *The Second Sex* stresses the facts of sexual differences while arguing for women's equality. According to Beauvoir, it is unfair and immoral to utilize sexual differences as justification for women's subjugation. After Beauvoir challenged the patriarchal system that the war left behind in Western Europe, Betty Friedman wrote her critique, *The Feminine Mystique,* in 1963. Friedman discusses the widespread unhappiness women had with post-World War II American culture. In

order to describe the conventional presumption that women might find fulfillment through housework, marriage, sexual inactivity, and childrearing alone, she coined the term "feminine mystique." Furthermore, traditional attitudes claimed that "really feminine" women were completely fulfilled in the home and had no need for further education, employment, or political participation. Friedman observed that many American housewives struggled to express their discontent with their lives, so she recollected all these collective feelings in her critique. The fundamental thesis of *The Feminine Mystique* was that misogynistic beliefs prevented women from realizing their full human potential.

Regardless of the crucial victories western women have accomplished during the 20th century, such as the right to vote or the right to access birth control, the fight for equality has not ended. Despite the fact that in most constitutions worldwide there are clauses where men and women are equal under the law and forbid any discrimination of any kind, women are still fighting for equal pay worldwide.

Women's involvement in the capitalist system as a brand new working force and a new economic market with acquisitive power was the reason why women started being heard in societal affairs. In a capitalist society, all decisions revolve around money, and that is why people with the most acquisitive power get the most say regarding policy compared to the underprivileged in the societal pyramid. Therefore, the fact that women are still underpaid compared to their male

counterparts even in the 21st century is a portrayal of how women are still not regarded as equal to men.

This phenomenon is known as the "gender pay gap" or "gender wage gap," which measures the difference in median hourly earnings between men and women. Both the gender pay gap and equal compensation for equal effort are distinct problems that need to be addressed specifically. Paying employees who perform the same job at different rates of pay, whether on purpose or not, is a practice known as "not awarding equal pay for equal labor" and is widely seen as illegal discrimination. "The concept of the gender pay gap is distinct and takes into account the consequences of unequal pay and a lack of other work-life supports" (Holmes and Corley).

Almost two-thirds of mothers are the main or joint breadwinners for their families in the United States alone, where women still earn 80% of what men make (Holmes and Corley). Hence, working families are particularly hard-hit by the gender pay gap. In addition, women of color face a greater salary difference. For instance, "Hispanic women only make up 54% of the typical income of white, non-Hispanic men, whereas black American women only make up 63%" (Holmes and Corley).

For the purpose of this paper, the gender pay gap is going to be analyzed through two trains of thought: labor economics and feminist theory. By doing so, it

is intended to demonstrate how closely related they are and that it is a fact that women's labor is not as respected and regarded as men's work.

One important factor that is important to highlight is the fact that the gender pay gap is not exclusively an American issue. The gender pay gap impacts every single country worldwide to a different degree. For example, the country with the smallest gender pay gap is New Zealand, with 5.6 percent, and the country with the largest pay gap is South Korea, with 36.6 percent (Holmes and Corley).

To understand the extent of the gender pay gap and how it has changed over time, economists have historically looked to gender-specific characteristics, such as the underrepresentation of women in the workforce or workplace discrimination. Nevertheless, economists have acknowledged that the general pay structure, or the prices the labor market attaches to talents and the rents flowing to individuals in favored sectors, can have a significant impact on the relative salaries of different subgroups in the labor market (Blau and Kahn 107). This understanding's justification follows simple logic. "For instance, a rise in the return to experience or in sectorial differentials will widen the gender pay gap as women typically have less job market experience than men and tend to work in diverse occupations and industries" (Blau and Kahn 107). The same logic holds true for all nations: gender pay discrepancies tend to be bigger in nations with relatively high skill-to-pay ratios and significant sectoral differentials.

According to research conducted by Cornell University economists Francine Blau and Lawrence Kahn on how the gender pay gap differed between Germany, the United Kingdom, the United States, Austria, Switzerland, Sweden, Norway, and Australia, they concluded that the degree of wage centralization is inversely correlated with the size of the gender pay gap (Blau and Kahn 538). The more centralized the wage structure of a country is, the narrower the gender pay gap. As a result of recognizing the significance of the wage structure in explaining variations in the gender pay gap among nations, particularly given the higher level of wage disparity in the United States compared to other industrialized nations, women's increasing relative skills and labor force participation have received a lot of attention as factors contributing to improvements in the wage gap in the United States. According to Blau and Kahn's research, it would be beneficial to look at the effects of compensation structure changes in order to properly understand changes in the gender pay gap. American women may have been swimming against the current in a labor market that was becoming more adverse to low-paid workers in the 1970s and 1980s (Blau and Kahn, 538) due to the rising rate of wage inequality in the country.

By using macroeconomics to analyze the gender pay gap across borders, it is important to emphasize that, while wage structures play a role in how large or small the gender pay gap is, one must avoid the trap of analyzing only data to explain a phenomenon that has existed since women began working. It is also essential to analyze empirical data and take into consideration cultural factors that

have played a role in allowing wage disparities to persist. In order to showcase how cultural barriers toward gender equality can play a bigger role in allowing the gap to persist, the case of South Korea was examined.

The tremendous economic boom South Korea has achieved over the past three decades is frequently referred to as a "miracle." This heavily populated nation, which has no mineral reserves, little arable land, and a heavy military burden, has had one of the greatest rates of economic growth of any country. The GNP of South Korea increased by an average of 8% between 1953 and 1990, with multiple peaks of over 10%. "These rates were higher than the 4-5 percent seen in developed industrial economies" (Park 127). Surprisingly, the status of women in South Korea has not improved despite the country's phenomenal economic growth and rapid modernization.

As countries aim to develop, one common misconception is that the modernization process will remove the traditional burdens women face in the division of labor, therefore leading to their liberation. It is also believed that industrialization undermines the patriarchy of traditional society by fostering attitudes in women such as achievement orientation, mobile personalities, and egalitarianism (Park 127).

The development strategy of South Korea, which relies heavily on labor and is focused on exports, has altered the contribution of women to the national economy. The number of working women increased fourteen times between 1963

and 1990 (Park 133). The number of economically active females aged 14 and up increased from two million in 1960 to six million in 1985 (Park 133). The South Korean labor force growth rate since its independence indicates that women's participation was essential to the development of the manufacturing sector.

Despite having a significant impact on economic growth, women's situation in the workplace is far from ideal. In actuality, there is a significant gap between the contributions of women and their financial rewards. The disparity is reflected in the low pay, long hours, and ongoing sexual division of labor for women.

In South Korea, wage disparities exist between industrial workers with low levels of education and skills and those with higher levels of education. "In 1989, the sex differential in wages for college-educated workers was 100 to 68 in favor of the male" (Park 134). Salary discrepancies go beyond the paycheck. Women are not only undervalued and overworked in the workplace when compared to their male counterparts, but they are also excluded from political and social arenas. The harsh reality South Korean women have faced since independence is directly tied to its misogynistic culture.

South Korea's case debunks the misconception that gender inequality is tied to the level of development of a nation and that women benefit from the industrialization process just as men do. Even if South Korea grants legal equality for its men and women in its constitution, there is still room for improvement in terms of policies and institutional changes.

The reason the gender pay gap exists is not merely misogyny. Labor economics explains how the gender pay gap varies from one profession to another and how corporate financial incentives play a huge role in unfair pay. Before diving into what allows the gap to exist across disciplines, it is important to note that "gender earning gaps would not be reduced much if women were distributed among occupations in exactly the same proportions as men" (Goldin 27). In fact, this would only narrow the gap by 15 percent.

In America, the business and finance occupations have larger wage gaps compared to the science and technology fields due to the impact availability has on hourly pay. Business and financial workers who put in 50 hours a week on average make disproportionately more money than those who put in 40. However, the weekly or annual incomes of their peers in the technology or science fields who work 50 hours a week only increase proportionately higher than those who work 40 hours (Goldin 30).

As women tend to carry more duties outside of the workplace that require eventually missing working hours (i.e., motherhood), it would be fair to assess that firms penalize women who are not willing to be as available as their male counterparts. If businesses did not have a financial incentive to pay employees working 80 hours a week more than double what they would receive for 40-hour weeks, the gender pay gap would shrink.

The reason corporate jobs have the most significant gender wage gap is due to their non-linearity. Non-linearity in labor value occurs when teams that depend on one another must coordinate schedules and when it is expensive for employers to let employees take time off from work—as in many financial and legal professions (Goldin 30). The non-linearity in this situation means that a lawyer working 30 hours per week is worth less than half as much as a lawyer working 60 hours per week.

In contrast, linearity happens when "employees can substitute for one another in a relatively cost-effective fashion" (Goldin 30). This occurs when there are lots of autonomous team members and when information technology makes switching clients and patients less expensive (as in pharmacy). According to linearity, a lawyer who works 30 hours per week is worth exactly half as much as a lawyer who works 60 hours per week. With linearity, people's paycheck is directly proportional to their work.

The International Labor Organization claims that sex discrimination accounts for a sizable portion of the gender wage gap, even while individual factors including education, working hours, occupational segregation, abilities, and experience all play a role (Aliling). Women have been particularly impacted by the COVID-19 epidemic in terms of unstable income, representation in the most afflicted industries, and the gendered allocation of household duties (Aliling). Their employment has suffered as a result, and decades of gains toward gender equality are in danger of being undone. Governments, businesses, and worker organizations

all agree that it is urgent to close the gender wage gap. In order to eliminate gender wage discrepancies, more and more governments are recommending transparency policies and information exchange. One may claim that policies and their ramifications do not affect women to the same degree as men do after demonstrating how South Korea's industrialization process does not help both men and women to the same degree. Because of this, each nation must customize its policies so that women can receive the same protection and benefits from them as men.

For a systemic issue, a systemic response is required. Gender mainstreaming is a systematic strategy that many experts believe has the power to revolutionize society. In addition to developing nations, where gender mainstreaming originally gained traction in the early 1990s, it is now a crucial instrument for public sector policy in Canada, Europe, particularly the European Union, and New Zealand (Joann and Todd 166). The concepts of gender mainstreaming, which were initially created by feminist professionals working in the development sector, gained significant traction as a tool for policymaking in developed nations at the 1995 UN Decade for Women Conference in Beijing.

An example of a country that has openly used gender mainstreaming for decades in Australia. The key to reducing the gender pay gap in Australia, a nation with a low gender pay gap in comparison to other OECD countries, was a system of centralized bargaining (i.e., mutual agreement between employers and workers through unions for improved conditions). However, Australian attempts to

eliminate the gender pay gap through wage determination decisions have been hindered in two ways: they are unable to address pay rates above the award minimums, and they are unable to address the undervaluation of professions with a female preponderance (Joann and Todd 169).

Gender mainstreaming in economic funding is receiving more attention as gender inequities and their significance for economic growth are becoming more widely recognized. The gender mainstreaming agenda presents a plan for addressing gender disparities in several spheres of life. The development community must assist attempts to overcome the overlapping disadvantages through more extensive institutional changes as it seeks to more fully integrate gender in financing (Klugman and Morton 137). Programs that focus on gender will need to be connected to larger policy frameworks with complementary initiatives.

The advancement of gender equality has seen some encouraging examples of collaboration. The Ethical Family Income in Chile included gender-aware features in its policies, such as training programs for the unemployed and incentives for women's employment. Promising preliminary findings from a randomized trial of this approach include a rise in the participation and labor force of women (Klugman and Morton 138). Another successful case of gender mainstreaming in action is seen in South Africa, where the "Intervention with Microfinance for AIDS and Gender Equality" (IMAGE) program connects microcredit with women's support groups and education on gender and health issues. Positive results from a randomized study

were found, including an increase in household assets and a decrease in partner violence (Klugman and Morton 138).

Just as gender mainstreaming's effect on communities can be seen relatively fast, the absence of these approaches for policy-making can be as noticeable as well. There is not a direct correlation between how educated are women in a country with its internal gender pay gap. A decisive factor that perpetuates this phenomenon, going beyond the macroeconomic explanation of how centralized wages are in a country, and whether the person has a linear or nonlinear paycheck, is the presence of work-life policies. The absence of these policies or most commonly the lack of proper enforcement of these policies, are the main reason why the gap does not shrink completely.

It has been determined that how the family institution is treated in capitalist societies plays a significant role in the gender pay gap. Having children increases a man's salary, but it decreases a woman's income (Joann and Todd 168). As previously seen, the gender pay gap persists even after women pursue higher education. After receiving an MBA, there is a sizable gender pay gap that widens over time; 12 to 15 years later, women earn just 57% of what men do (Goldin 32). Although it was roughly 95% at the start of their careers, the percentage is still 64% when grades and MBA courses are taken into account (some specialties pay more). In order to have more flexibility, MBA women who have had children often transition to lower-paying jobs (or quit their jobs) (Goldin 32).

Despite the fact that American women are more qualified than women in other Western nations, and despite the country's commitment to anti-discrimination laws being longer and frequently stronger than that of most economically developed nations, the United States has historically ranked among the nations with the largest gender pay gaps (Blau and Kahn 108). The U.S. labor market imposes a far greater penalty on people with lesser levels of market skills or who are located in less preferred sectors of the global market, in part because of its decentralized wage-setting institutions and the gap still prevalent despite the multiple policies that have been ratified in the past 80 years to narrow it.

Even though writing policy can immensely aid issues such as the gender pay gap, if governmental actions do not go beyond writing a law, then these efforts are virtually useless. Women were given "legal" equality under Korea's 1948 constitution, in contrast to the West, where women had to fight for such rights. Under Article 8 of the Constitution, which also ensures the equality of all people, political, economic, and social discrimination based on sex, religion, or social standing is prohibited (Park 134). Although women in South Korea are given on paper the same rights as men, the family law enacted in 1957 contradicts this statement. Confucian ideals in this law prevented women from possessing any property rights or even claiming custody of their children in the event of a divorce. It took three decades of activism and protesting this controversial law, which was abolished in 1991 for women to achieve this victory. This just shows that just because in a constitution the word "equal" is written down, it does not mean women

are regarded as such. South Korea is the clear example of how the absence of gender mainstreaming in their policies can lead to further gender discrimination on an everyday basis.

In the same way that we used the wage distribution in the US to demonstrate how the decentralization of wages might widen the wage gap, we can also examine why their pay equity policies have not worked. First, because advocates have examined the wage gap by comparing female-dominated jobs to all jobs instead of comparing them to male-dominated jobs, pay fairness has been hampered by technical concerns (Bednarek 231). By comparing jobs that pay differently from themselves, this method has estimated the wage gap inaccurately. Second, political factors made salary changes difficult when management proposed limiting compensation increases for men in response to pay equity concerns (Bednarek 232). Males fought to maintain their relative standing as a result of this behavior, which reduced salary adjustments for women. The restriction of pay equity to the public sector is a third factor contributing to the failure of pay equity efforts (Bednarek 232). Pay equity rules have been established by many public sector unions, but the private sector's labor and management have not followed their lead. In addition, these policies focus on women working on professional jobs, when the majority of women in the United States work in the informal sector. "Pay equity programs that continue affecting only females in professional or managerial work sends a message to those who remain in traditionally female jobs that reinforces the message of the capitalist market— that these jobs are less important than other jobs and that

women who work in these jobs are inferior to those who can move to non-traditional jobs" (Bednarek 233).

Laws protecting workers were passed in industrialized nations and made it more costly to operate in their host countries. Multiple transnational corporations moved their factories to developing countries. By doing so, they exported their operations but also their unsafe malpractices including the disregard for women's labor and safety. For that reason, when one proposes a solution to narrow the gender pay gap worldwide, one must advocate for solutions that are drafted from a globalized perspective. An efficient way the gender pay gap can narrow is through transnational corporations. By creating moral incentives such as making their clients hold them accountable and publicly targeting the ones with sexist practices, the market itself would punish them for their inaction and by doing so they would contribute to the solution of this issue.

As corporations have financial incentives to reward their workers for availability, governments can create financial incentives for these corporations to fully join the fight for equal pay. If countries, especially those who host the most transnational corporations, foster competitions that would allow the private sector to create solutions for tackling this issue, the public and private sector would invest in communities where women are the main breadwinners and help them reverse the legacy of gender discrimination, and as a consequence narrow the gender pay gap.

Policy employing gender mainstreaming can be capable of changing culture. The power of legislation should not be underestimated. It is important to understand that passing legislation alone is not going to do the trick. One cannot deny that passing legislation does help keep companies in check, and it also helps to raise awareness regarding this issue, but if complementary policies that would prevent corporations to find loopholes are not put in place then these policies would be just bandaids for this issue.

Policy employing gender mainstreaming can be capable of changing culture. The power of legislation should not be underestimated. Although the centralization of wages in a country can determine its ability to tackle this issue, it is important to highlight that just because a country has a decentralized wage structure the gender pay gap would not be able to close. Even though countries have similar reasons why the gender pay gap persists, underlying factors that perpetuate the gap are intrinsic within countries. For that reason, efforts to narrow the gender pay gap should start by addressing regional issues. Another important factor is that governmental efforts should not function on a complaint basis but rather actively investigate employers and corporations. Aggressive efforts to narrow the gap would highlight this issue as a key issue for development. The more awareness is raised towards solving this issue the more pressure politicians and corporations will have to take action.

Although western women in the 21st century enjoy the most freedom that ever before, we shall not settle. There are still spaces and job markets where women are not fully welcome, and it is our duty to unionize and advocate for better work

conditions. Real liberation of women won't happen until men and women are paid

equally worldwide.

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Psychology II

Sarah Wooddell
"The Lies History Taught Us:
Minimization and Historic Erasure in Highschool History Textbooks"

Mentored by Kelsie Bianca
Cecil College

"Sarah did her own research for the paper, presented well, and was able to answer all the questions that were thrown her way. Excellent job!"

Stacy Casden, MS, CASA
Adjunct Professor of Psychology
Pace University

Educational materials socialize students away from the real tragedies of history with biases that critically damage student's understanding of historic events. To better understand this bias, data was collected through a convenience sample of five textbooks from a local high school. From the textbooks, five topics spanning United States History, and minority group were selected and analyzed for the occurrence of bias. Biases occurred in all the textbooks, with a particularly high number of occurrences within Japanese American internment camps, and the Trail of Tears. Themes of bias within the textbooks were also recorded, which allowed an insight into what misinformation students were most likely to encounter, and what textbook authors and teachers should actively work against. This bias deeply influences students and prevents an open discussion of this nation's history, which illustrates how every textbook and author needs to take more accountability into what they are writing, and the impact that it has on students. The data was limited to five textbooks and five historic events. Future research would cover more topics from a wider array of textbooks. This would allow a deeper insight into trends of student information and education.

Keywords: Critical Race Theory, Education, United States History, Bias, Racism

The Lies History Taught Us:

Minimization and Historic Erasure in Highschool History Textbooks

Introduction

Textbooks are often seen as the classic way of learning. Theoretically, they provide an easy way to learn about the world. However, in reality, learning with a textbook is much different. Nearly every student in the United States uses a textbook for classroom education, each to varying extents (Daniels, 2020). While they have been universally implemented, the discussion among teachers regarding their use in education is vastly different. Many educators and education researchers agree that textbooks are not the best mode of education for students (Daniels, 2020). Textbooks provide a single perspective, often creating incredibly biased results in their presentation of factual evidence (Daniels, 2020).

A standard exists for ensuring that certain topics are covered in history textbooks. The standard for secondary education (5-12th grade) are known as the United States History Content standards (United States History Content Standards, n.d.). These standards are designed to ensure that all students across the United States receive education on the same topics. Within this design, the content is broken down into ten eras, spanning from before 1680 to present (United States History Content Standards, n.d.).

While the creation of The United States History Content Standards helped greatly to ensure that students are receiving an education that covers the entirety of American history; it has plenty of shortcomings. It is unable to keep up with modern changes and has no guidance for how to approach these topics (Byrne, 2000). Under this thin guidance, educators and textbook authors are free to manipulate the realities of American History however they please. One commonly discussed issue with the first era, Three Worlds Collide, is that many textbooks present the connection between the old world and the new worlds as a joint benefit, ignoring the genocide of many Native Americans (Byrne, 2000).

Textbook bias isn't only an issue concerning history textbooks. Medical and nursing textbooks are another common source of textbook bias. A study of nursing textbooks found a disturbing usage of the

words "difficult" and "normal" when discussing African American patients (Daniels, 2020). Writing like this creates and perpetuates preconceived notions about African Americans and makes nurses less likely to treat them with the patience and respect that they would a white patient, which sadly makes the incredibly high rate that physical restraints on African American women anything but shocking (Nash, et. al. 2021).

The design of history textbooks directly impacts society's understanding of the world. For many people they're the main source of historical education. When these textbooks are biased, the next generation is taught a biased view of the world, tainting the facts. By removing the bias that exists within textbooks, a new wave of education can be achieved where students are allowed to see the uncensored atrocities of the past.

Methodology

The data used in this study was gathered through a convenience sample of history textbooks from a public high school located in Oxford Pennsylvania. All textbooks included must be United States History specifics (textbooks where the majority of the material was covering pre-European American people were not included), high school or AP (Advanced Placement curriculum), included minimum mention of all five topics, and were published within the last four decades. Textbooks were collected with publication dates of 1991, 2004, 2015, 2016 and 2020. These resources represented material from five major textbook publishing houses. Available in Table 1.

Five textbooks were used to gain a better understanding of the differences across recent decades, and between publishing houses. Topics were spaced across United States History (starting 1776) and multiple minority groups (African Americans, Native Americans, Pacific Islanders, Asian-Americans, and Homosexuals). Individual topics were selected for the heightened chance for historic erasure and minimization of tragedy. The length between events allows comparisons of how more recent events are presented compared to earlier events.

The number of biases per book, or the number of biases per event do not give a proper insight into the actual rate of occurrence of biases. Instead, a value of words per bias was calculated, by dividing

the average word count to the total number of biases, both by textbook and by event. This prevented skewed data as a result of passage lengths. A higher "words per bias" ratio reflects a less biased topic, as the occurrence of biases are less frequent. Oppositely, a lower "words per bias" ratio reflects a more biased topic, as the occurrences of individual biases are more frequent. See Table 1 and Table 2.

Diversity was a driving force in this research, not just in the concepts covered, but also the sources investigated. By considering various years, topics, and publishing houses, better insight into the range of biases is available. However, with only one book per publishing house, one book per decade (with the exception of the 2010s with two books) and one event impacting each minority group, larger trends will not be notable, and further research will be required.

Results

Across the five textbooks, American Passages: A History of the United States (2004) had the highest number of biases at twelve. The Reader's Companion to American History (1991) and Liberty, Equality, and Power: A History of the American People (2020) both had the lowest occurrences of biases at three each. American History: Connecting with the Past (2015) and United States History (2016) at ten and nine occurrences of biases respectively. See Figure 1.

Across the events, Japanese American internment camps had the highest number of biases at eighteen. This was twice the second highest event, the Trail of Tears, with nine occurrences of bias. The American Colonization Society was the third highest at six occurrences of bias. The Filipino American war and HIV/AIDS were tied with the lowest number of biases at three each. See Figure 2.

The "words per bias" measure not only aligns with these trends but allows deeper insight into these trends. Japanese American internment camps had the highest rate of "words per bias" at 38.1. The second highest "words per bias" is for the American Colonization Society at 40.2. The American Filipino War had the highest "words per bias", at 208.8. See Table 2.

By the textbook, United States History (2016) had the lowest "words per bias" at 45.8. American Passages: A History of the United States (2004) had the second lowest at 54.7. Liberty, Equality, and Power: A History of the American People (2020) had the highest number of "words per bias" at 113.7.

Discussion

The number of occurrences per event does not provide an accurate view of the rate that occurrences actually occur in the texts. The Trail of Tears and Japanese American Internment both ranked as the highest but had the two highest average word count.

This same logic applies to the textbook. The Readers Companion to American History (1991) and Liberty, Equality, and Power: A History of the American People (2020) both had the lowest word counts and the least number of biases.

By event, the Japanese American internment camps had the highest number of biases by far at 18. This concept isn't new. Research from 1996 also mentions the abnormally high rate of bias in United States history textbooks when discussing Japanese American internment camps (Romanowski). One concept that this research mentions is the idea that Japanese American loyalty is measured by military service (Romanowski, 1996). Three of the five textbooks (American History: Connecting with the Past, United States History, The Reader's Companion to American History) measured in this study displayed variations of this exact bias. The fault in this narrative is that the Japanese Americans were already citizens, they followed the laws, owned property, and paid taxes: they already were loyal citizens. This supports a harmful narrative about Japanese Americans, and immigrants in general, one that suggests that there is no way for them to be loyal to the country they immigrated to. This is even more harmful to first generation immigrants (Issei), who were treated much worse and we're not allowed to serve in the military, meaning they had no hope to be seen as legally "loyal".

Another common trend in biases was the minimization of Japanese American Suffrage within Internment Camps. Language to the effect of "Harsh but not brutal" (Ayers, pg. 729) directly underplays conditions in the camps. This was observed in two (American History: Connecting to the Past, and

American Passages) of the five textbooks reviewed. This language justified the suffering and minimized their pain. There is no scenario where educational material should suggest that an internment camp wasn't cruel. While textbooks should make a distinction between the concentration camps of the Holocaust and those of Japanese American internment, it shouldn't come at the cost of downplaying one. They were both tragedies and deserve deft attention to how they were able to happen, and the lasting impact on their respective cultures, but labeling Japanese American internment as "not brutal" (Ayers, pg. 729) is not the way to achieve that.

Other research discussing the treatment of the Indigenous people of the Americas in history texts mention different trends of biased language (Parsons, 1982). For example, they discuss explicit biases involving the specific language used. One trend that Parsons discusses in 1979 is the use of "murdered" for killings done by Native Americans, and "killed" by killings done by white colonizers (1982). Although synonymous, the word *murdered* carries a more sinister connotation than *killed*. This specific trend wasn't noticed in the Trail of Tears chapters, but that doesn't mean they were free of bias.

A more common trend within modern textbooks discussing The Trail of Tears was the implication that the Indigenous people of the Americas were only valued by their ability to join western culture. This perpetuates negative ideals about the value of Indigenous cultures in modern day. In reality, there is nothing wrong with the way that Indigenous people practiced their cultures, and most people in modern day can agree that such diversity in cultural practices is overwhelmingly good for society.

The other commonly noticed trend in biases during the Trail of Tears chapters was the mention of Christian conversion or Native American reeducation schools. Starting with Christian conversion: this pushes a Christian dominant narrative, one where the Christian majority did nothing but benefit the world around them, devoid of conflict, while directly ignoring that Christian founded Native American reeducation schools that had a long running history of separating Native American children from their cultures and families, before torturing and killing them. While this is the objective truth, the textbooks, namely United States History and American Passages: A History of the United States, present the presence of re-education as a benefit to the Indigenous people of the Americas. One phrase that reflects how poorly these chapters reflect the conditions within these schools comes from American Passages: A

History of the United States (2004) "others went to schools established by white missionaries who persuaded a considerable number of Indians to convert to Christianity." Beyond the incredibly dated and offensive use of the word "Indian", the word "persuaded" completely disregarded the actual tactics used to bring children into the schools, namely abduction and abuse. Children were particularly targeted, and whether through force or false pretexts, they were punished for practicing their birth languages and cultures in a hope to destroy their way of life (Newland, 2022). These schools did nothing to benefit the Native American communities, but a student who had only been taught a biased view of history wouldn't have the knowledge to understand that.

The militaries involvement in these reeducation camps was also notable missing from the history textbooks researched. The military played a key role in both gathering the children, but the schools were also located on military bases (Newland, 2022). This presents a further challenge with understanding the bias in textbooks. Information that has been willingly left out only creates more bias.

Analyzing the "words per bias" rate provides a more thorough understanding of the larger trends of academic misinformation. When measured using the "words per bias" metric, Japanese American internment camps had the highest rate of bias occurrence at 38.1. This is to be expected as it had drastically more biases than the other events measured. The difference is more noticeable with American Colonization Society, with only 3 total recorded biases and an average of 241.1 words, was the event with the second highest rate of biases per word at 40.2. This provides a better understanding of the actual rate that biases occur, especially for the less discussed events.

As discussed previously, there was a limiting factor on data collection. Due to time and budgetary restraints, only five books were considered for their biases. With more time and resources further research, it is anticipated that larger trends of bias plaguing history textbooks would be exposed, along with authors and publishing houses that trend with biased writing.

Conclusion

The tragic reality of high school history education is that these textbooks all displayed evidence of bias. This illustrates how every textbook and author needs to take more accountability into what they are writing, and the impact that it has on students. The presence of bias has been discussed before. Research of another set of history textbooks agreed that equating military service with loyalty was present in an overwhelming majority of texts (Romanowski, 1996). Other research found an increased rate of emotional language being used discussing violence perpetrated by Native Americans, compared to their white counterparts (Parson, 1982). The word "killing" was often used when describing white people attacking Native Americans, and "murder" was used for Native Americans attacking white people. This subconsciously condones the actions of the whites, while condemning the same behavior from Native Americans (Parson, 1982).

This data was limited to five textbooks and five historic events. Future research would cover more topics from a wider array of textbooks. This subsequent research would allow a deeper insight into trends of student information and disinformation and education. Further research would also allow the process to be streamlined enough for both schools and publishing houses to study their own books to ensure that they're providing the highest quality of education to children.

Appendix

	Publication Date	Publisher Name
American History: Connecting with the Past (AP edition) 15th ed.	2015	McGraw Hill
Liberty, Equality, Power: A History of the American People. Enhanced. 7th ed	2020	Cengage
American Passages. A history of the United States. 2nd ed.	2004	Thomas Wardsworth
United States History.	2016	Pearson
The Reader's Companion to American History	1991	Houghton Mifflin Company

Table 1.

	Average Word Count	Number of Total Biases	Words Per Bias
American Colonization Society	241.1	6	40.2
Japanese Internment Camps	685.8	18	38.1
Trail of Tears	1046.8	9	116.3
Filipino American War	417.6	2	208.8
HIV/AIDS	319	2	159.5

Table 2.

	Average Word Count	Number of Total Biases	Words per Bias
American History, Connecting with the Past (AP edition) 15th ed	1044	10	104.4

Liberty, Equality, Power: A history of the American People, Enhanced. 7ᵗʰ ed	341.2	3	113.7
American Passages. A History of the United States. 2ⁿᵈ ed	656.6	12	54.7
United States History.	412	9	45.8
The Reader's Companion to American History	256.6	3	85.5

Table 3.

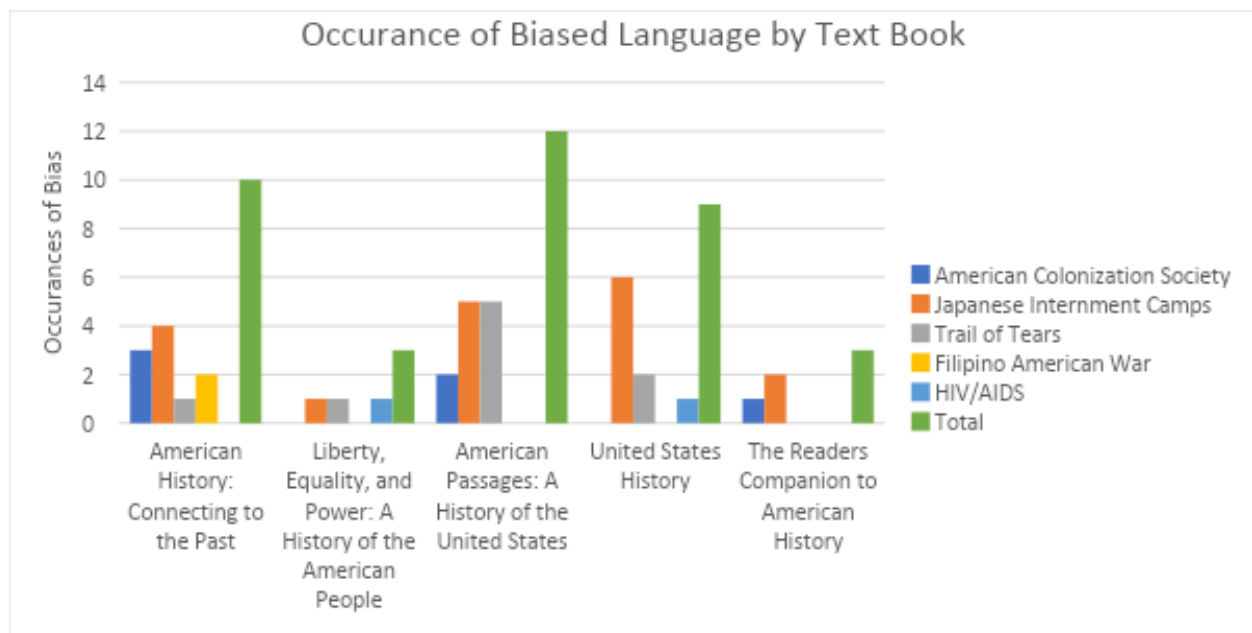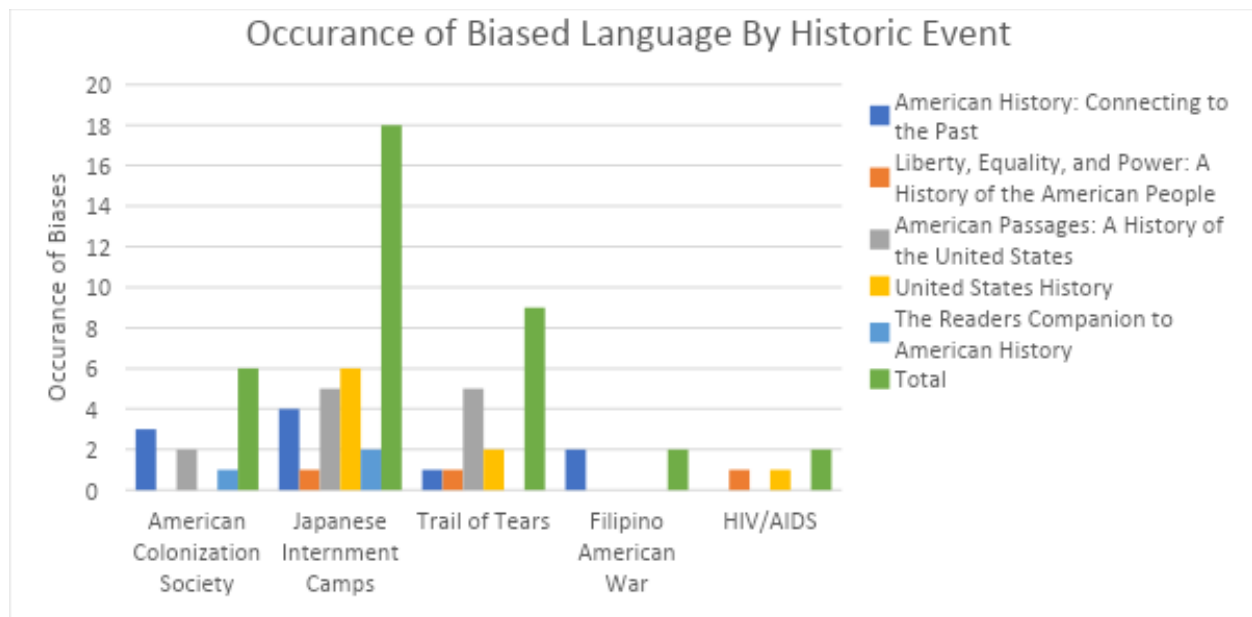*Figure 1*

Figure 2

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* Denotes a citation for a textbook used during research

Phisolophy

Kinbo Yu
"Analysis of Religious Experiences of Mohammad and the Buddha"

Mentored by Peter Dlugos
Bergen Community College

"Kinbo offers an incisive comparison of the mystical experiences of the Buddha and Mohammad by utilizing the descriptive approaches of William James and Rudolph Otto. The analysis is systematic and the essay is tightly structured. The question posed at the conclusion— Might Gautama's experience not qualify as 'religious' in the same way as Mohammad's— is justified based on the frameworks of both James and Otto."

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Analysis of Religious Experiences of Mohammad and the Buddha

Immanuel Kant once said, "Two things fill the mind with ever new and increasing admiration and awe, the more often and steadily we reflect upon them: the starry heavens above me and the moral law within me." Even though we do not know the deeper meaning of these words, we can, at least, know that the heavens and the moral law are something mysterious and hard to understand. Indeed, there are too many things people do not know in the world, and they constantly drive scientists and scholars to explore them. For the religious experience, it is the same. People might hear about how Mohammad became the prophet of God, or how the Buddha reached enlightenment and became the "Awakened One," but they do not know how to describe those unusual experiences. My goal in this paper is to describe and analyze the religious experiences of Mohammad and the Buddha by applying the views of thinkers like William James and Rudolph Otto.

To achieve the goal, I have organized my paper into three sections. In the first section, I describe the religious experiences of Mohammad and the Buddha. In the second section, I first provide the views of William James and then apply them to the experiences of Mohammad and the Buddha. In the last section, I provide the views of Rudolf Otto first and then apply them to their religious experiences.

Mohammad's Religious Experiences

Mohammad was born in the 6th century in the Arabian city of Mecca. At that time, he was a young merchant rather than the messenger of God. He usually retreated into a cave named Hira on Mount Jabal al-Nour near Mecca several weeks a year and prayed in it. In 610 CE, according to Islamic traditions, angel Gabriel appeared to Mohammad one day while he was meditating and praying in the cave. With the help of angel Gabriel, Mohammad, who even could not read, recited verses that later became the beginning of Quran 96:1. *Mohammad: His Life Based on the Earliest Sources* by Martin Lings provides a very detailed description of what happened that day:

> Ramadan was the traditional month of retreat, and it was one night towards the end of Ramadan, in his fortieth year, when he was alone in the cave, that there came to him an Angel in the form of a man. The Angel said to him: "Recite!" and he said: "I am not a reciter," whereupon, as he himself told it, "the Angel

took me and whelmed me in his embrace until he had reached the limit of mine endurance. Then he released me and said: 'Recite!' I said: 'I am not a reciter,' and again he took me and whelmed me in his embrace, and again when he had reached the limit of mine endurance he released me and said: 'Recite!', and again I said 'I am not a reciter.' Then a third time he whelmed me as before, then released me and said:

'Recite in the name of thy Lord who created! He createth man from a clot of blood. Recite; and thy Lord is the Most Bountiful, He who hath taught by the pen, taught man what he knew not.'" (Lings 43-44)

Surprisingly, after angel Gabriel left, Mohammad recited those words and felt they were written on his heart (Lings 44). He was distressed and frightened, fleeing from the cave (44). On his way home, he heard a voice from the sky — "O Mohammad, thou art the Messenger of God, and I am Gabriel" (44). Mohammad raised his head, and then he saw angel Gabriel, filling the whole sky (44). He turned his head and tried to avoid seeing the angel, but he could not; angel Gabriel was everywhere (44). After returning home, he told Khadijah, his first wife, what he had seen and heard "when the intensity of his awe had abated" (44).

When Mohammad was asked how Revelation came, he mentioned two ways:

Sometimes it cometh unto me like the reverberations of a bell, and that is the hardest upon me; the reverberations abate when I am aware of their message. And sometimes the Angel taketh the form of a man and speaketh unto me, and I am aware of what he saith. (Lings 44-45)

Aisha also reported that even though on a very cold day, the sweat dropped from Mohammad's forehead when being inspired divinely (Bukhari, 49-50).

Moreover, in the story of Mohammad's night journey, angel Gabriel appeared to him, and he "traveled from Mecca on a winged steed to 'the farthest mosque'" and then "toured heaven and hell, and spoke with earlier prophets, such as Abraham, Moses, and Jesus" ("Mohammad").

The Buddha's Religious Experience

The Buddha, also known as Siddhartha Gautama, was a prince before reaching enlightenment, or became the "Awakened One." After seeing the old man, the sick person, the dead body, and the ascetic on his journey, Gautama abandoned his wife and child, resolving to find out the meaning of life and suffering ("Gautama Buddha"). He failed many times until finding the "Middle Way," which would lead him to the state of mind he was looking for — enlightenment. Gautama sat down beneath a pipal tree and meditated, vowing not to leave until reaching enlightenment ("The life of Buddha," 00:31:35 - 00:31:41). In the first three nights, when his mind "was thus concentrated, purified, bright, unblemished, rid of defilement, pliant, malleable, steady, & attained to imperturbability," he directed it to "the knowledge of recollecting his past lives," "the knowledge of the passing away & reappearance of beings," and "the knowledge of the ending of the mental fermentations" ("A Sketch"). By means of the divine eye, Gautama saw "beings passing away and reappearing," discerning "how they are inferior & superior, beautiful & ugly, fortunate & unfortunate in accordance with their kamma" ("A Sketch").

During that time, Mara, the evil one, the Lord of the desire realm, appeared to Gautama and tried to prevent him from reaching enlightenment. Mara "gathered all four divisions of his great and powerful army" and sent them to attack Gautama, but they failed (*The Play* 230). Mara then sent his daughters to seduce him; however, Gautama still remained in meditation, and the evil daughters then disappeared (O'Brien). After that, Gautama passed through four jhanas to reach enlightenment and became the Buddha, or the "Awakened One" ("The life of Buddha," 00:36:14 - 00:36:24).

James's Views

William James was an American philosopher and psychologist. In *The Varieties of Religious Experience: A Study in Human Nature,* he claimed that religious experiences, or mystical states, have four characteristics: "ineffability," "noetic quality," "transiency," and "passivity." "Ineffability" means that the mystical experiences cannot be told or described by ordinary words, or "be imparted or transferred to others"; instead, it must be "directly experienced" (James 370). James also gave us a very good example — for people who have never been in love, they can never understand lovers' states of mind (370). Indeed, many things, such as war and death, can only be fully felt and understood when we approach or experience them; there is no other way that we can understand those things. For

the second trait "noetic quality," it means that the mystical experience will give people knowledge that cannot be obtained through their mundane lives or day-to-day experiences. This knowledge is unusual and totally different from others. The states of knowledge, according to James, are "states of insight into depths of truth unplumbed by the discursive intellect" (James 370). He also described them as illuminations and revelations (370).

So far, I have explained the first two characteristics, which will, according to James, "entitle any state to be called mystical"; the other two characteristics are also found in those states, but they are less sharply marked (370).

"Transiency," that is, the mystical states are temporary and short-lived; they cannot be sustained for long. They could be 30 minutes or one hour. When faded, their quality "can but imperfectly be reproduced in memory; but when they recur it is recognized" (James 370-371). When it happens again and again, inner richness and importance will be felt (371). The last trait of mystical states is "passivity." It means that when a mystic is in the mystical state, he will feel "as if his own will were in abeyance, and indeed sometimes as if he were grasped and held by a superior power" (James 371). For the mystic controlled by a higher power, according to James, his mystical states will connect with "certain definite phenomena of secondary or alternative personality, such as prophetic speech, automatic writing, or the mediumistic trance" (371).

James's Views: Mohammad. Mohammad's religious experiences can be described as "ineffability," "noetic quality," "transiency," and "passivity." (1) Meeting angel Gabriel, reciting verses even though he could not read, hearing angel Gabriel's voice and seeing him in the sky, receiving revelations from Allah, and having a night journey are experiences that cannot be told or described by ordinary words, and that must be directly experienced; otherwise, nobody can fully understand them. (2) Verses Mohammad recited, words angel Gabriel told him, messages from Allah, and experiences (how heaven and hell look like) gained from night journey are the knowledge that cannot be obtained through people's mundane lives or day-to-day experiences, so those experiences are what we call "noetic quality." (3) After Mohammad returned home, the intensity of his awe abated. Thus, it is obvious that his mystical states are temporary and short-lived. (4) When angel Gabriel appeared to Mohammad and helped him recite verses, he had already been controlled. In his night journey, he was also led by angel Gabriel. As we can see, Mohammad was grasped and held by a superior power.

James's Views: The Buddha. The Buddha's religious experiences can be described as "ineffability" and "noetic quality." However, they cannot be described as "transiency" and "passivity." (1) Meditation is part of yoga, which means "the experimental union of the individual with the divine," and which was based on "persevering exercise; and the diet, posture, breathing, intellectual concentration, and moral discipline vary slightly in the different systems which teach it" (James 391-392). According to James, the yogi could establish samadhi first and then develop dhyana, or jhana, which was higher states of contemplation (393). When the yogi came out of samadhi, he remained "enlightenment, a sage, a prophet, a saint, his whole character changed, his life changed, illumined"; when the yogi reached higher states of contemplation, he felt nothing existed (393). If we look back to the Buddha's religious experience, however, we will find that those are the same things that Gautama did, so when Gautama meditated beneath the pipal tree, we could say that he was doing yoga, and that he was the yogi. Since those experiences cannot be told or described by ordinary words, they are what we call "ineffability." The appearance of demon Mara is also one of the experiences considered "ineffability." (2) Since Gautama gained knowledge from his meditation and first three nights, and it cannot be obtained through people's mundane lives or day-to-day experiences, his experiences were considered "noetic quality." (3) Because Gautama had reached enlightenment and become the Buddha, the mystical state (enlightenment) would last forever. Thus, "transiency" does not apply. (4) In the Buddha's religious experiences, he was never controlled by a superior power; instead, he controlled his own consciousness, and he ignored demon Mara and all his attacks. As a result, "passivity" does not apply.

Otto's Views

Rudolf Otto was a German theologian and philosopher. In *The Idea of the Holy*, he used the Latin phrase "mysterium tremendum," the only appropriate expression, to describe the mystical experiences (Otto 12). He claimed that mystical experiences have three components: "tremendum," "mysterium," and "fascination." For "tremendum," it also includes three elements — "awfulness," "overpoweringness," (majestas) and "energy" or "urgency." For the second component "mysterium," it also includes the element "wholly other."

The first element, "awfulness," is easy to understand. If we look it up in a dictionary, we will get a definition like this: something that makes you feel great respect or fear. Indeed, according to Otto, mystics will feel something "more than natural, ordinary fear"; they will not only feel afraid or aghast, but also have some kind of awe when in front of someone having superior power (Otto 15). The second element, "overpoweringness," means mystics are aware of the majesty and might of something that is absolutely supreme in power (Otto 20). Moreover, they also have the feeling of their "own abasement, of being but 'dust and ashes' and nothingness" (20). As a result, mystics learn to be humble (20). "Energy," the last element of "tremendum," means mystical experiences are neither stint nor stay; instead, they are "urgent, active, compelling, and alive" (Otto 24). They have immense vigor as well as incredible energy or urgency (24). For the element "wholly other," it is very similar to James' idea of "ineffability." That means mystical experiences are beyond "the sphere of the usual, the intelligible, and the familiar" (Otto 26). They are "extraordinary phenomena or astonishing occurrences," totally different from experiences people obtain from their day-to-day lives, beyond their comprehension (27). The last one is "fascination." According to Otto, although mystical experiences are awful, overpowering, vigorous, and unusual, they are also attractive, fascinating, and charming. They show themselves as "something uniquely attractive and fascinating" (Otto 31). Those experiences may also "pass into blissful excitement, rapture, and exaltation" (37). Mystics will be attracted and caught up in those experiences, longing for them.

Otto's Views: Mohammad. Mohammad's religious experiences can be described as "awfulness," "overpoweringness," "energy," "wholly other," and "fascination." (1) Meeting angel Gabriel and seeing him in the sky, Mohammad was distressed and frightened. Even though on a very cold day, Mohammad was sweating when being inspired divinely. It indicates that he was afraid at that time. When he was asked to recite verses, he replied angel Gabriel carefully and respectfully; when he saw angel Gabriel in the sky, he turned his head. It is obviously that Mohammad was awed by angel Gabriel, who had superior power. Thus, those experiences are what we call "awfulness." (2) Being whelmed in angel Gabriel's embrace, seeing angel filled the whole sky, and talking with earlier prophets, Mohammad was aware that he was nothing compared to those who had superior power. Thus, he learned to be humble, and those experiences are what we call "overpoweringness." (3) Because angel Gabriel talked to Mohammad and embraced him, those mystical experiences were urgent, active, compelling, and alive. Therefore, we can call them "energy." (4) Meeting angel Gabriel, reciting verses even though he could not read, hearing angel

Gabriel's voice and seeing him in the sky, receiving revelations from Allah, and having a night journey are the experiences that beyond the sphere of the usual, the intelligible, and the familiar. Those are all extraordinary phenomena. As a result, we can call them "wholly other." (5) After knowing what he met in the cave was a real angel rather than an evil spirit, Mohammad was relaxed and willing to become the messenger of Allah. Furthermore, in his night journey, he was speaking with earlier prophets. Thus, to some extent, we can say that Mohammad was excited and exalted, and he was fascinated by them. Those are what we call "fascination."

OTTO'S VIEWS: THE BUDDHA. The Buddha's religious experiences can be described as "energy," and "wholly other." However, they cannot be described as "awfulness", "overpoweringness," and "fascination." (1) In Gautama's first three nights, we can easily find that what he had experienced is urgent, active, and alive. For example, Gautama saw a lot of things by means of the divine eye; demon Mara appeared to him and attacked him. (2) Using the divine eye and seeing demon Mara are beyond the sphere of the usual, the intelligible, and the familiar. People cannot experience those things in their lives. Thus, they are considered "wholly other." (3) Even though demon Mara appeared to Gautama, he was not afraid, nor was he awed by Mara, so "awfulness" does not apply. (4) Gautama did know there was something absolutely supreme in power, but he did not have the feeling of his own abasement. For instance, when demon Mara appeared to him, he just ignored him. Therefore, "overpoweringness" cannot be used. (5) In order to reach enlightenment, having no desire is essential. If Gautama was fascinated by those feelings or mystical experiences, he could never reach enlightenment and become the Buddha. On the other hand, if he had reached enlightenment and become the Buddha, he could never be fascinated or attracted by those things. Therefore, "fascination" can never be used to describe his religious experiences.

Conclusion

The religious experiences of Mohammad and the Buddha are very hard for people to describe and understand. By applying the views of thinkers like William James and Rudolf Otto, we could easily describe and analyze their religious experiences. James claimed that mystical states have four characteristics — "ineffability," "noetic quality," "transiency," and "passivity" — and they all fit Mohammad's religious experiences. For the Buddha's religious

experiences, however, only "ineffability" and "noetic quality" can be applied. On the other hand, Otto claimed that mystical experiences have three components — "tremendum," "mysterium," and "fascination." In other words, he believed that mystical experiences are "awfulness," "overpoweringness," "energy," "wholly other," and "fascination." For Mohammad's religious experiences, all of them can be applied, but for the Buddha's religious experiences, we can only describe them as "energy" and "wholly other." Since all of the views can be applied to Mohammad's religious experiences, whereas only a few of them can be applied to the Buddha's, it is also interesting to think about whether or not Buddhism is a religion or a philosophy or both.

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